



## TRANSFORMERS and INDUCTORS

TRANSFORMERS AND INDUCTORS DESCRIPTION			
SURFACE MOUNT AUDIO TRANSFORMERS: LOW PROFILE (.2" Height x .55 x .55)		2	3
1/4" x 1/4" TRANSFORMERS; 2 OHM TO 30K OHM; 400 Hz TO 250 KHz; 100 MILLIWATT AT 1 KHz		4	5
SURFACE MOUNT TRANSFORMERS; 2 OHM TO 30K OHM; 400 Hz TO 250 KHz; 100 MILLIWATT AT 1 KHz		6	7
.35" x .32" TRANSFORMERS; 2 OHM TO 40K OHM; 400 Hz TO 100 KHz; 400 MILLIWATT AT 1 KHz		8	9
SURFACE MOUNT TRANSFORMERS; 2 OHM TO 40K OHM; 400 Hz TO 100 KHz; 400 MILLIWATT AT 1 KHz		10	11
.35" x .46" TRANSFORMERS; 2 OHM TO 100K OHM; 300 Hz TO 100 KHz; 600 MILLIWATT AT 1 KHz		12	13
.5" x .35" TRANSFORMERS; 2 OHM TO 100K OHM; 300 Hz TO 75 KHz; 600 MILLIWATT AT 1 KHz		14	15
SURFACE MOUNT TRANSFORMERS; 20 OHM TO 100K OHM; 300 Hz TO 75KHz; 600 MILLIWATT AT 1 KHz		16	17
.5" x .5" TRANSFORMERS; 2 OHM TO 250K OHM; 150 Hz TO 75 KHz; 1 WATT AT 1 KHz		18	19
SURFACE MOUNT TRANSFORMERS; 20 OHM TO 250K OHM; 150 Hz TO 75 KHz; 1 WATT AT 1 KHz		20	21
.75" x .375" TRANSFORMERS; 2 OHM TO 135K OHM; 75 Hz TO 30 KHz; 1.5 WATT AT 1 KHz		22	23
.75" x .52" TRANSFORMERS; 2 OHM TO 135K OHM; 50 Hz TO 30 KHz; 2 WATT AT 1 KHz		24	25
.75" x .82" TRANSFORMERS; 2 OHM TO 80K OHM; 20Hz TO 25 KHz; 3 WATT AT 1 KHz		26	27
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**TRANSFORMER DIVISION: Ultra-Miniature Size • High Reliability • Maximum Possible Performance****INNOVATORS IN  
ULTRA-MINIATURE  
TRANSFORMERS**

**REVOLUTIONARY CONSTRUCTION:** All units are constructed using PICO ELECTRONICS patented structure which insures the utmost in reliability and thermal stability. The distinct magnetic core allows for extreme miniaturization with superior electrical performance. Every unit is wound with an independent epoxy bobbin which affords maximum insulation between the magnetic core and the windings. Every transformer is tested at 300 volts DC and many units have been constructed to withstand 1500 volts DC. The epoxy bobbin is provided with separate winding slots allowing each finish lead to have a predetermined egress and a fixed spacing relative to the other finish leads. Attachments between windings and finish leads are made on the bobbin periphery to afford maximum spacing between connections yielding the utmost in thermal stability and dielectric strength. The circular bobbin allows for circular shaped turns which eliminates the corner stress found in conventional windings made on rectangular bobbins.

**THERMAL CYCLE GUARANTEE:** Today's equipment design calls for transformers to perform at extremes of high and low temperatures and to withstand the shock of alternate exposures to these extremes. Miniature transformers necessitate the use of extremely fine wires and conventional transformer construction techniques are totally inadequate in protecting the fine wires to withstand temperature cycling. The patented PICO construction enables PICO ELECTRONICS to guarantee every PICO device for a minimum of 25 thermal cycles.



# DC-DC CONVERTERS • AC-DC POWER SUPPLIES

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Many PICO transformers have passed 300 thermal cycles and have been exposed to a variety of temperature extremes and as more data is collected, the 25 thermal cycles guarantee will be up-graded. Contact factory for your special requirements.

The thermal shock test conditions are conducted in strict accordance with Method 107C of MIL-STD-202F, Test condition A-1 (units are cycled 25 times, using temperature extremes of -55°C and +85°C).

**SR CONSTRUCTION GUARANTEES 300 THERMAL CYCLES:** Pico has developed a special technique utilizing silicone rubber which enables every unit in his catalog to be made with a 300 thermal cycle guarantee. Contact factory for details.

**QUALIFIED PRODUCTS LIST (QPL).** PICO ELECTRONICS is a QPL source. Copies of the QPL listing may be obtained by writing to Commanding Officer, Naval Publications and Form Center, 5801 Tabor Avenue, Philadelphia, Pa., 19120. Request QPL-27.

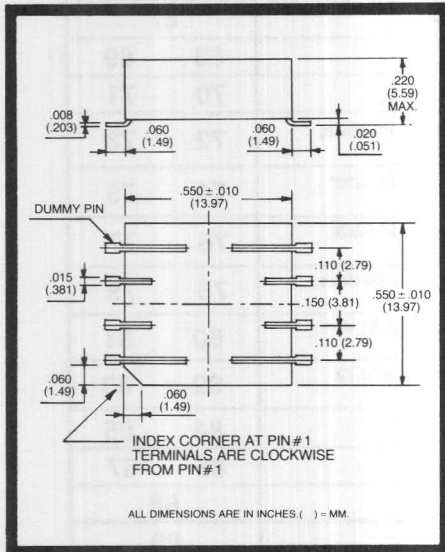
**GRADE RECLASSIFICATION:** The Defense Supply Agency has recently reinterpreted the grade requirements of these transformers. All units are presently listed as GRADE 5 in place of GRADE 4. Both GRADE 4 and GRADE 5 transformers are subject to the same environmental testing, but in addition the GRADE 5 transformer must pass flammability requirements.

**FAMILY RECLASSIFICATION:** The Defense Supply Agency in the latest version of MIL-T-27 has changed the Family Classification. The following Families now apply to these transformers. Power transformer 03, Power inductor 04, Audio inductor 20, Audio transformer 21, Saturable transformer 40.

# PICO Electronics, Inc.

**New  
Surface Mount  
(.2" Ht. x .55" x .55")**

# LOW PROFILE AUDIO TRANSFORMERS



## SPECIFICATIONS:

• **MIL-T-27:** .....  
All units manufactured to MIL-T-27. Military Designation is TF5521ZZ for Transformers.

• **FREQUENCY RESPONSE:** .....  
± 2dB, 300 Hz-50 KHz at 1.0 Milliwatt.

• **MAXIMUM DISTORTION:** .....  
5% With Rated Power Level at 1 KHz and 300 Hz.

• **DIELECTRIC STRENGTH:** .....  
All Units Tested at 200 V RMS.

• **INSULATION RESISTANCE:** .....  
Greater Than 10,000 Megohms at 300 V DC.

• **WEIGHT:** .....  
3 Grams

• **OPERATING TEMPERATURE:** .....  
-55°C to +130°C

• **TERMINALS:** .....  
Copper Clad Steel, Tin Dipped.  
Solderability per MIL-STD-202  
Method 208.

• **THERMAL SHOCK:** .....  
25 Cycles, Method 107D, MIL-STD-202E, Test  
Condition A-1.

PICO PART NUMBER	PRIMARY IMPEDANCE OHMS	SECONDARY IMPEDANCE OHMS		POWER MILLIWATTS 1 KHz and higher	300 Hz and higher	PRIMARY UNBAL DC CURRENT ma	PRIMARY DC RESISTANCE OHMS	SECONDARY DC RESISTANCE OHMS		TURNS/RATIO PRIM/SEC		PICO PRICES 1-9 ***
		SER	PAR					SER CONN	PAR CONN	SEC SER CONN	SEC PAR CONN	
78003	10 ct	10 ct	2.5	.4	.050	31.6	.83	1.16	.29	1:1	2:1	21.41
78005	20 ct	8 ct	2	.4	.050	22.3	1.66	.93	.23	1.58:1	3.16:1	21.41
78010	20 ct	20 ct	5	.4	.050	22.3	1.66	2.33	.58	1:1	2:1	21.41
78015	32 ct	32 ct	8	.4	.050	17.6	2.66	3.73	.93	1:1	2:1	21.41
78020	40 ct	40 ct	10	.4	.050	15.8	3.33	4.66	1.16	1:1	2:1	21.41
78025	48 ct	16 ct	4	.4	.050	14.4	4	1.86	.46	1.73:1	3.46:1	22.72
78030	50 ct	50 ct	12.5	.4	.050	14.1	4.16	5.8	1.45	1:1	2:1	22.72
78035	80 ct	32 ct	8	.4	.050	11.1	6.66	3.73	.93	1.58:1	3.16:1	26.97
78040	100 ct	40 ct	10	.4	.050	10	8.33	4.66	1.16	1.58:1	3.16:1	22.72
78045	100 ct	100 ct	25	.4	.050	10	8.33	11.6	2.91	1:1	2:1	20.43
78050	120 ct	12.8 ct	3.2	.4	.050	9.1	10	1.49	.37	3.06:1	6.12:1	20.43
78055	120 ct	60 ct	15	.4	.050	9.1	10	7	1.75	1.41:1	2.83:1	26.97
78060	120 ct	120 ct	30	.4	.050	9.1	10	14	3.5	1:1	2:1	26.97
78065	150 ct	12 ct	3	.4	.050	8.2	12.5	1.4	.35	3.54:1	7.08:1	20.43
78070	150 ct	50 ct	12.5	.4	.050	8.2	12.5	5.8	1.45	1.73:1	3.46:1	22.72
78075	150 ct	100 ct	25	.4	.050	8.2	12.5	11.6	2.91	1.22:1	2.45:1	22.72
78080	150 ct	150 ct	37.5	.4	.050	8.2	12.5	17.5	4.37	1:1	2:1	26.97
78085	150 ct	600 ct	150	.4	.050	8.2	12.5	70	17.5	1:2	1:1	22.72
78090	200 ct	200 ct	50	.4	.050	7	16.6	23.3	5.83	1:1	2:1	22.72
78095	300 ct	12 ct	3	.4	.050	5.8	25	1.4	.35	5:1	10:1	20.43
78100	300 ct	50 ct	12.5	.4	.050	5.8	25	5.8	1.45	2.45:1	4.9:1	22.72
78105	300 ct	150 ct	37.5	.4	.050	5.8	25	17.5	4.37	1:1.41	2.83:1	22.72
78110	300 ct	300 ct	75	.4	.050	5.8	25	35	8.75	1:1	2:1	26.97
78115	300 ct	600 ct	150	.4	.050	5.8	25	70	17.5	1:1.41	1.41:1	20.43
78120	320 ct	12.8 ct	3.2	.4	.050	5.6	26.6	1.49	.37	5:1	10:1	20.43
78125	400 ct	40 ct	10	.4	.050	5	33.3	4.66	1.16	3.16:1	6.32:1	26.97
78130	400 ct	120 ct	30	.4	.050	5	33.3	14	3.5	1.83:1	3.65:1	26.97
78135	400 ct	200 ct	50	.4	.050	5	33.3	23.3	5.83	1.41:1	2.83:1	22.72
78140	400 ct	400 ct	100	.4	.050	5	33.3	46.6	11.66	1:1	2:1	26.97
78145	400 ct	1000 ct	250	.4	.050	5	33.3	116.6	29.16	1:1.58	1.26:1	30.94
78150	400 ct	2000 ct	500	.4	.050	5	33.3	233.3	58.3	1:2.24	1:1.12	30.94
78155	400 ct	4000 ct	1000	.4	.050	5	33.3	466.6	116.6	1:3.16	1:1.58	27.94
78160	500 ct	12.8 ct	3.2	.4	.050	4.5	41.6	1.49	.37	6.25:1	12.5:1	23.68
78165	500 ct	16 ct	4	.4	.050	4.5	41.6	1.86	.46	5.6:1	11.2:1	23.68
78170	500 ct	50 ct	12.5	.4	.050	4.5	41.6	5.83	1.45	3.16:1	6.32:1	23.68
78175	500 ct	150 ct	37.5	.4	.050	4.5	41.6	17.5	4.37	1.83:1	3.65:1	23.68
78180	500 ct	500 ct	125	.4	.050	4.5	41.6	58.3	14.58	1:1	2:1	23.68
78185	*500 ct	500 ct	-	.4	.050	4.5	41.6	58.3	14.58	1:1	-	23.68
78190	500 ct	600 ct	150	.4	.050	4.5	41.6	70	17.5	1:1.1	1.83:1	23.68
78195	600 ct	12.8 ct	3.2	.4	.050	4.1	50	1.49	.37	6.85:1	13.7:1	20.43
78200	600 ct	30 ct	7.5	.4	.050	4.1	50	3.5	.875	4.47:1	8.94:1	21.41
78205	600 ct	48 ct	12	.4	.050	4.1	50	5.6	1.4	3.54:1	7.07:1	21.41
78210	600 ct	200 ct	50	.4	.050	4.1	50	23.3	5.83	1.73:1	3.46:1	21.41
78215	600 ct	600 ct	150	.4	.050	4.1	50	70	17.5	1:1	2:1	21.41
78220	*600 ct	600 ct	-	.4	.050	4.1	50	70	17.5	1:1	-	23.68
78225	600 ct	1200 ct	300	.4	.050	4.1	50	140	35	1:1.41	1.41:1	21.41
78230	640 ct	12.8 ct	3.2	.4	.050	3.9	53.3	1.49	.37	7.07:1	14.14:1	21.41
78235	700 ct	100 ct	25	.4	.050	3.8	58.3	11.6	2.91	2.65:1	5.29:1	21.41
78240	800 ct	12.8 ct	3.2	.4	.050	3.5	66.6	1.49	.37	7.9:1	15.8:1	21.41
78245	800 ct	48 ct	12	.4	.050	3.5	66.6	5.6	1.4	4.08:1	8.16:1	31.95
78250	800 ct	800 ct	200	.4	.050	3.5	66.6	93.3	23.3	1:1	2:1	21.41
78255	900 ct	600 ct	150	.4	.050	3.3	75	70	17.5	1.22:1	2.45:1	21.41
78260	1000 ct	12 ct	3	.4	.050	3.2	83.3	1.4	.35	9.13:1	18.3:1	21.41
78265	1000 ct	50 ct	12.5	.4	.050	3.2	83.3	5.83	1.45	4.47:1	8.94:1	23.68
78270	1000 ct	1000 ct	250	.4	.050	3.2	83.3	116.6	29.15	1:1	2:1	23.68

\*\*\*Discount Prices: 1-9 Net; 10-24 less 10%; 25-49 less 16%; 50-99 less 23%; 100-499 less 30%  
Ordering Instructions: No minimum. Net 30 days F.O.B. Mt. Vernon, New York.

**Delivery—  
stock to one week**

For immediate engineering assistance or to place an order—Call Toll Free 800-431-1064

## PICO Electronics, Inc.

453 N. MacQuesten Pkwy., Mt. Vernon, N.Y. 10552 • 914-699-5514 • FAX 914-699-5565

# LOW PROFILE AUDIO TRANSFORMERS

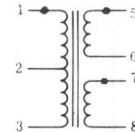


**SURFACE MOUNT**  
PICO surface mount units utilize materials and methods to withstand extreme temperature (220°C) of vapor phase, I.R., and other reflow procedures without degradation of electrical or mechanical characteristics.

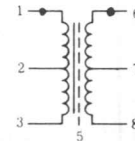
PICO PART NUMBER	PRIMARY IMPEDANCE OHMS	SECONDARY IMPEDANCE OHMS		POWER MILLIWATTS		PRIMARY UNBAL DC CURRENT ma	PRIMARY DC RESISTANCE OHMS	SECONDARY DC RESISTANCE OHMS		TURNS/RATIO PRIM/SEC		PICO PRICES 1-9 ***
		SER	PAR	1 KHz and higher	300 Hz and higher			SER CONN	PAR CONN	SER CONN	SEC PAR CONN	
78275	1060 ct	12.8 ct	3.2	.4	.050	3.1	88.3	1.49	.37	9.1:1	18.2:1	21.41
78280	1200 ct	12.8 ct	3.2	.4	.050	2.9	100	1.49	.37	9.68:1	19.4:1	19.28
78285	1200 ct	500 ct	125	.4	.050	2.9	100	58.3	14.58	1.55:1	3.1:1	19.28
78290	1200 ct	1200 ct	300	.4	.050	2.9	100	140	35	1:1	2:1	19.28
78295	*1200 ct	1200 ct	-	.4	.050	2.9	100	140	35	1:1	-	26.36
78300	1500 ct	12 ct	3	.4	.050	2.6	125	1.4	.35	11.2:1	22.4:1	21.41
78305	1500 ct	500 ct	125	.4	.050	2.6	125	58.3	14.58	1.73:1	3.46:1	23.68
78310	*1500 ct	600 ct	-	.4	.050	2.6	125	70	17.5	1.58:1	-	23.68
78315	*1500 ct	1500 ct	-	.4	.050	2.6	125	175	43.75	1:1	-	23.68
78320	1600 ct	12.8 ct	3.2	.4	.050	2.5	133.3	1.49	.37	11.2:1	22.4:1	21.41
78325	2000 ct	8 ct	2	.4	.050	2.2	166.6	.93	.23	15.8:1	31.6:1	27.94
78330	2000 ct	2000 ct	500	.4	.050	2.2	166.6	233.3	58.33	1:1	2:1	27.94
78335	*2000 ct	2000 ct	-	.4	.050	2.2	166.6	233.3	58.33	1:1	-	30.94
78340	2000 ct	8000 ct	2000	.4	.050	2	166.6	933.3	233.3	1:2	1:1	27.94
78345	2000 ct	2500 ct	625	.4	.050	1.8	166.6	291.6	87.5	1:1	2:1	27.94
78350	3000 ct	3000 ct	725	.4	.050	1.8	250	350	87.5	1:1	2:1	22.73
78355	*3000 ct	3000 ct	-	.4	.050	1.7	250	350	105	1:1	-	30.94
78360	3600 ct	3600 ct	900	.4	.050	1.6	300	420	.46	1:1	2:1	22.73
78365	4000 ct	16 ct	4	.4	.050	1.6	333.3	1.86	17.5	15.8:1	31.6:1	27.94
78370	4000 ct	600 ct	150	.4	.050	1.6	333.3	70	29.16	2.58:1	5.16:1	27.94
78375	4000 ct	1000 ct	250	.4	.050	1.6	333.3	116.6	233.3	2:1	4:1	30.94
78380	*4000 ct	8000 ct	-	.4	.050	1.4	333.3	933.3	14.58	1:1.41	-	30.94
78385	5000 ct	500 ct	125	.4	.050	1.4	416.6	58.3	145.8	3.16:1	6.32:1	23.68
78390	5000 ct	5000 ct	1250	.4	.050	1.2	416.6	583.3	1.45	1:1	2:1	23.68
78395	7500 ct	50 ct	12.5	.4	.050	1.2	625	5.83	2.91	12.2:1	24.5:1	23.68
78400	7500 ct	100 ct	25	.4	.050	1.2	625	11.66	17.5	8.66:1	17.3:1	23.68
78405	7500 ct	600 ct	150	.4	.050	1.2	625	70	72.9	3.54:1	7.07:1	26.36
78410	7500 ct	2500 ct	625	.4	.050	1.2	625	291.6	218.75	1.73:1	3.46:1	26.36
78415	*7500 ct	7500 ct	-	.4	.050	1.1	625	875	218.75	1:1	-	30.94
78420	8000 ct	12.8 ct	3.2	.4	.050	1.1	666.6	1.49	.37	25:1	50:1	23.68
78425	8000 ct	1000 ct	250	.4	.050	1.1	666.6	116.6	29.16	2.83:1	5.66:1	26.36
78430	*8000 ct	1200 ct	-	.4	.050	1.1	666.6	140	35	2.58:1	-	30.94
78435	*9000 ct	9000 ct	-	.4	.050	1.0	750	1050	262.5	1:1	-	30.94
78440	10000 ct	12.8 ct	3.2	.4	.050	1.0	833	1.49	.37	28:1	56:1	21.41
78445	10000 ct	16 ct	4	.4	.050	1.0	833	1.86	.46	25:1	50:1	21.41
78450	10000 ct	100 ct	25	.4	.050	1.0	833	11.66	2.91	10:1	20:1	23.68
78455	10000 ct	200 ct	50	.4	.050	1.0	833	23.3	5.83	7.07:1	14.14:1	23.68
78460	10000 ct	500 ct	125	.4	.050	1.0	833	58.3	14.58	4.47:1	8.94:1	23.68
78465	10000 ct	600 ct	150	.4	.050	1.0	833	70	17.5	4.08:1	8.16:1	23.68
78470	10000 ct	1000 ct	250	.4	.050	1.0	833	116.6	29.16	3.16:1	6.32:1	23.68
78475	10000 ct	1200 ct	300	.4	.050	1.0	833	140	35	2.89:1	5.77:1	27.94
78480	10000 ct	1500 ct	375	.4	.050	1.0	833	175	43.75	2.58:1	5.16:1	27.94
78485	10000 ct	2000 ct	500	.4	.050	1.0	833	233.33	58.33	2.24:1	4.47:1	27.94
78490	10000 ct	5000 ct	1250	.4	.050	1.0	833	583.3	145.83	1.41:1	2.83:1	27.94
78495	10000 ct	7500 ct	1875	.4	.050	1.0	833	875	218.75	1.15:1	2.3:1	27.94
78500	10000 ct	10000 ct	2500	.4	.050	1.0	833	1166.6	291.6	1:1	2:1	26.93
78505	10000 ct	10000 ct	-	.4	.050	1.0	833	1166.6	291.6	1:1	-	30.94

\*\*\* Discount Prices: 1-9 Net: 10-24 less 10%; 25-49 less 16%; 50-99 less 23%; 100-499 less 30%  
Ordering Instructions: No minimum. Net 30 days F.O.B. Mt. Vernon, New York

## SCHEMATICS FOR TRANSFORMERS WITH SPLIT SECONDARIES



## SCHEMATICS FOR TRANSFORMERS WITH ELECTROSTATIC SHIELD



## FEATURES

- EXTREME RESISTANCE TO THERMAL SHOCK
- ULTRA MINIATURE SIZE
- PICO IS APPROVED OPL SOURCE (MIL-T-27)
- MAGNETIC SHIELD DESIGN AVAILABLE
- ELECTROSTATIC SHIELDING CAN BE ADDED.
- VARIATION OF STANDARD DESIGNS AVAILABLE
- SPECIAL PRODUCTION TECHNIQUES ENSURE UNIFORM SIZE AND LEADS WHICH ARE FREE OF ENCAPSULANT. NO MENISCUS IN LEAD AREA.
- EVERY UNIT IN THIS CATALOG CAN BE MADE WITH A 300 THERMAL CYCLE GUARANTEE USING PICO'S SPECIAL SR CONSTRUCTION. CONTACT FACTORY FOR DETAILS.

THIS PRODUCT IS PATENTED

**New  
Surface Mount  
(.2"Ht. x .55" x .55")**

**Delivery—  
stock to one week**

For immediate engineering assistance or to place an order—Call Toll Free 800-431-1064

**PICO Electronics, Inc.**

453 N. MacQuesten Pkwy., Mt. Vernon, N.Y. 10552 • 914-699-5514 • FAX 914-699-5565

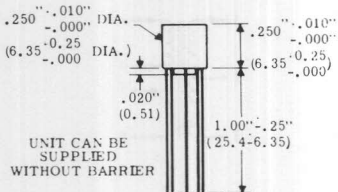


**1/4" x 1/4"**

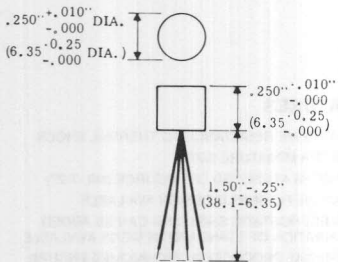
# **PICO's** ultra-miniature transformers

For Surface Mount versions of  
this series see pages 6 and 7

## **F SERIES** Plug-In



## **G SERIES** Insulated Leads



DIMENSIONS ARE IN INCHES (MM)

## **SPECIFICATIONS**

- MIL-T-27:**  
All units manufactured to MIL-T-27, Military Designation is TF5R21ZZ for Transformers, TF5R20ZZ for Inductors.
- FREQUENCY RESPONSE:**  
±3dB, 400 Hz-250 KHz at 1.0 Milliwatt.
- MAXIMUM DISTORTION:**  
5% With Rated Power Level at 1 KHz and 400 Hz.
- DIELECTRIC STRENGTH:**  
All Units Tested at 200 V RMS.
- INSULATION RESISTANCE:**  
Greater Than 10,000 Megohms at 500 V DC.
- WEIGHT:**  
1.1 Grams.
- OPERATING TEMPERATURE:**  
-55°C to +105°C (All Units Can Be Supplied to Class S Requirements, +130°C).
- TERMINALS:**  
Solid .012 Diameter Conductor. Conductor is copper clad steel, Tinned 100%. Electroplated Per MIL-T-10727A and ASTM CCS B452.
- THERMAL SHOCK:**  
25 Cycles, Method 107D, MIL-STD-202E, Test Condition A-1.

Delivery—  
stock to one week

PART NUMBER	F Series Plug-In	G Series Insulated Leads	PRIMARY IMPEDANCE OHMS	SECONDARY IMPEDANCE OHMS	SPLIT WINDINGS SER	PAR	POWER MILLIWATTS 400 Hz and higher	PRIMARY UNBAL DC CURRENT ma	PRIMARY DC RESISTANCE OHMS	SECONDARY DC RESISTANCE OHMS	SER CONN	PAR CONN	TURNS RATIO SEC SER CONN	TURNS RATIO SEC PAR CONN	PRICES 1-9***	
															F-Series	G-Series
F-28003	G-29003		10 ct	10 ct	2.5	125	20	11.5	1.1	1.35	.34	1.1	2.1	27.67	26.32	
F-28005	G-29005		20 ct	8 ct	2	125	20	8	2.1	1.28	.32	1.58:1	3.16:1	27.67	26.32	
F-28010	G-29010		20 ct	20 ct	5	125	20	8	2.1	2.56	.64	1.1	2.1	27.67	26.32	
F-28015	G-29015		32 ct	32 ct	8	125	20	6.5	3.52	4.32	1.08	1.1	2.1	27.67	26.32	
F-28020	G-29020		40 ct	40 ct	10	125	20	5.6	4	4.77	1.19	1.1	2.1	27.46	26.32	
F-28025	G-29025		48 ct	16 ct	4	125	20	5.2	4.3	2.3	.58	1.73:1	3.46:1	25.16	23.94	
F-28030	G-29030		50 ct	50 ct	12.5	125	20	5	5.5	6.6	1.65	1.1	2.1	25.16	23.94	
F-28035	G-29035		80 ct	32 ct	8	125	20	4	8.5	4.25	1.06	1.58:1	3.16:1	27.46	23.94	
F-28040	G-29040		100 ct	40 ct	10	125	20	3.6	12.1	4.85	1.21	1.58:1	3.16:1	27.46	23.94	
F-28045	G-29045		100 ct	100 ct	25	125	20	3.6	12.1	12	3	1.1	2.1	25.16	23.94	
F-28050	G-29050		120 ct	12.8 ct	3.2	125	20	3.3	13.2	1.6	.4	3.06:1	6.12:1	25.16	23.94	
F-28055	G-29055		120 ct	60 ct	15	125	20	3.3	13.2	7.3	1.83	1.41:1	2.83:1	30.07	23.94	
F-28060	G-29060		120 ct	120 ct	30	125	20	3.3	13.2	16	4	1.1	2.1	30.07	28.54	
F-28065	G-29065		150 ct	12 ct	3	125	20	3	15	1.56	.39	3.54:1	7.07:1	27.32	26.01	
F-28070	G-29070		150 ct	50 ct	12.5	125	20	3	15	6.6	1.65	1.73:1	3.46:1	30.07	31.73	
F-28075	G-29075		150 ct	100 ct	25	125	20	3	15	14.5	3.63	1.22:1	2.45:1	30.07	28.54	
F-28080	G-29080		150 ct	150 ct	37.5	125	20	3	15	18.3	4.58	1.1	2.1	30.07	28.54	
F-28085	G-29085		150 ct	600 ct	150	125	20	3	15	72	18	1.2	2.1	30.07	28.54	
F-28090	G-29090		200 ct	200 ct	50	125	20	2.5	22	26.8	6.7	1.1	2.1	30.07	28.54	
F-28095	G-29095		300 ct	12 ct	3	125	20	2	33	1.56	.39	5.1	10.1	30.07	28.54	
F-28100	G-29100		300 ct	50 ct	12.5	125	20	2	33	6.6	1.65	2.45:1	4.9:1	30.07	28.54	
F-28105	G-29105		300 ct	150 ct	37.5	125	20	2	33	18.3	4.58	1.41:1	2.83:1	30.07	28.54	
F-28110	G-29110		300 ct	300 ct	75	125	20	2	33	40.3	10.08	1.1	2.1	27.32	28.54	
F-28115	G-29115		300 ct	600 ct	150	125	20	2	33	72	18	1.1:1	1.41:1	32.24	26.01	
F-28120	G-29120		320 ct	12.8 ct	3.2	125	20	2	34	1.6	0.4	5.1	10.1	32.24	30.62	
F-28125	G-29125		400 ct	40 ct	10	125	20	1.8	49	4.7	1.18	3.16:1	6.32:1	32.24	30.62	
F-28130	G-29130		400 ct	120 ct	30	125	20	1.8	49	16.3	4.08	1.83:1	3.65:1	32.24	30.62	
F-28135	G-29135		400 ct	200 ct	50	125	20	1.8	49	27.3	6.83	1.41:1	2.83:1	32.24	30.62	
F-28140	G-29140		400 ct	400 ct	100	125	20	1.8	49	49	12.25	1.1	2.1	29.31	27.90	
F-28145	G-29145		400 ct	1000 ct	250	125	20	1.8	49	120	30	1.1:1	1.26:1	32.24	30.62	
F-28150	G-29150		400 ct	2000 ct	500	125	20	1.8	49	270	67.5	1.2	2.4	32.24	30.62	
F-28155	G-29155		400 ct	4000 ct	1000	125	20	1.8	49	476	119	1.3	1.6	32.24	30.62	
F-28160	G-29160		500 ct	12.8 ct	3.2	125	20	1.6	54	1.6	0.4	6.25:1	12.5:1	29.31	27.90	
F-28165	G-29165		500 ct	16 ct	4	125	20	1.6	54	2.3	0.58	5.6:1	11.2:1	29.31	27.90	
F-28170	G-29170		500 ct	50 ct	12.5	125	20	1.6	54	6.6	1.65	3.16:1	6.32:1	29.31	27.90	
F-28175	G-29175		500 ct	150 ct	37.5	125	20	1.6	54	18.3	4.58	1.83:1	3.65:1	29.31	27.90	
F-28180	G-29180		500 ct	500 ct	125	125	20	1.6	54	65	16.3	1.1	2.1	32.24	30.62	
F-28185	G-29185		*500 ct	500 ct	-	125	20	1.6	54	65	-	1.1	-	32.24	30.62	
F-28190	G-29190		500 ct	600 ct	150	125	20	1.6	54	72	18	1.1:1	1.83:1	32.24	30.62	
F-28195	G-29195		600 ct	12.8 ct	3.2	125	20	1.5	59	1.6	0.4	6.85:1	13.7:1	32.24	30.59	
F-28200	G-29200		600 ct	30 ct	7.5	125	20	1.5	59	4.1	1.03	4.47:1	8.94:1	29.31	27.90	
F-28205	G-29205		600 ct	48 ct	12	125	20	1.5	59	5.2	1.3	3.54:1	7.07:1	29.31	27.90	
F-28210	G-29210		600 ct	200 ct	50	125	20	1.5	59	26.5	6.63	1.73:1	3.46:1	29.31	27.90	
F-28215	G-29215		600 ct	600 ct	150	125	20	1.5	59	72	18	1.1	2.1	29.31	27.90	
F-28220	G-29220		*600 ct	600 ct	-	125	20	1.5	59	72	-	1.1	-	*22.4	30.59	
F-28225	G-29225		600 ct	1200 ct	300	125	20	1.5	59	160	40	1.1:1	1.41:1	29.31	27.90	
F-28230	G-29230		640 ct	12.8 ct	3.2	125	20	1.5	62	1.6	0.4	7.07:1	14.14:1	29.31	27.90	
F-28235	G-29235		700 ct	100 ct	25	125	20	1.35	65	12	3	2.65:1	5.29:1	29.31	27.90	
F-28240	G-29240		800 ct	12.8 ct	3.2	125	20	1.3	88	16	4	7.9:1	15.8:1	32.24	30.59	
F-28245	G-29245		800 ct	48 ct	12	125	20	1.3	88	6.7	1.68	4.08:1	8.16:1	30.07	27.90	
F-28250	G-29250		800 ct	800 ct	200	125	20	1.3	88	106	26.5	1.1	2.1	30.07	27.90	
F-28255	G-29255		900 ct	600 ct	150	125	20	1.2	93	74	18.5	1.22:1	2.45:1	30.07	27.90	
F-28260	G-29260		1000 ct	12 ct	3	125	20	1.2	120	1.55	0.39	9.13:1	18.3:1	33.10	31.42	
F-28265	G-29265		1000 ct	50 ct	12.5	125	20	1.2	120	6.6	1.65	4.47:1	8.94:1	33.10	31.42	
F-28270	G-29270		1000 ct	1000 ct	250	125	20	1.2	120	120	30	1.1	2.1	30.07	27.90	
F-28275	G-29275		1060 ct	12.8 ct	3.2	125	20	1.2	125	1.6	0.4	9.1:1	18.2:1	33.10	31.42	
F-28280	G-29280		1200 ct	12.8 ct	3.2	125	20	1	133	1.6	0.4	9.68:1	19.4:1	33.10	31.42	
F-28285	G-29285		1200 ct	500 ct	125	125	20	1	133	65	16.25	1.55:1	3.1:1	33.10	31.42	
F-28290	G-29290		1200 ct	1200 ct	300	125	20	1	133	160	40	1.1	2.1	33.10	31.42	
F-28295	G-29295		*1200 ct	1200 ct	-	125	20	1	133	160	-	1.1	-	33.10	31.42	
F-28300	G-29300		1500 ct	12 ct	3	125	20	1	180	1.55	0.39	11.2:1	22.4:1	33.10	31.42	
F-28305	G-29305		1500 ct	500 ct	125	125	20	1	180	65	16.3	1.73:1	3.46:1	30.07	27.90	
F-28310	G-29310		*1500 ct	600 ct	-	125	20	1	180	73	-	1.58:1	-	30.07	27.90	
F-28315	G-29315		*1500 ct	1500 ct	-	125	20	1	180	215	-	1.1	-	33.10	31.42	
F-28320	G-29320		1600 ct	12.8 ct	3.2	125	20	1	190	1.6	0.4	11.2:1	22.4:1	33.10	31.42	
F-28325	G-29325		2000 ct	8 ct	2	125	20	0.8	218	1	.25	15.8:1	31.6:1	33.10	31.42	
F-28330	G-29330		2000 ct	2000 ct	500	125	20	0.8	218	260	65	1.1	2.1	33.10	31.42	
F-28335	G-29335		*2000 ct	2000 ct	-	125	20	0.8	218	260	-	1.1	-	33.10	31.42	
F-28340	G-29340		2000 ct	8000 ct	2000	125	20	0.8	218	830	207.5	1.2	1.1	32.24	30.70	

\*INCLUDES ELETROSTATIC SHIELD

\*\*\*Discount Prices: 1-9 Net; 10-24 less 10%; 25-49 less 16%; 50-99 less 23%; 100-499 less 30%  
Ordering Instructions: No minimum. Net 30 days F.O.B. Mt. Vernon, New York.

For immediate engineering assistance or to place an order—Call Toll Free 800-431-1064

# **PICO Electronics, Inc.**

453 N. MacQuesten Pkwy., Mt. Vernon, N.Y. 10552 • 914-699-5514 • FAX 914-699-5565



PART NUMBER		SECONDARY IMPEDANCE OHMS				POWER MILIWATTS		PRIMARY UNBAL DC CURRENT ma		SECONDARY DC RESISTANCE OHMS		TURNS RATIO PRIM:SEC		PRICES 1-9***	
F Series Plug-In	G Series Insulated Leads	PRIMARY IMPEDANCE OHMS	SPLIT WINDINGS SER	PAR	1 KHz and higher	400 Hz and higher			PRIMARY DC RESISTANCE OHMS	SER CONN	PAR CONN	SEC SER CONN	PRIM:SEC PAR CONN	F-Series	G-Series
F-28345	G-29345	2500 ct	2500 ct	625	125	20	0.75	280	280	70	1.1	2.1		32.24	30.70
F-28350	G-29350	3000 ct	3000 ct	725	125	20	0.65	330	330	82.5	1.1	2.1		32.24	30.70
F-28355	G-29355	*3000 ct	3000 ct	-	125	20	0.65	330	330	-	1.1	-		33.10	31.42
F-28360	G-29360	3600 ct	3600 ct	900	125	20	0.6	370	450	112.5	1.1	2.1		32.24	30.70
F-28365	G-29365	4000 ct	16 ct	4	125	20	0.57	400	2.3	0.58	15.8:1	31.6:1		32.24	30.70
F-28370	G-29370	4000 ct	600 ct	150	125	20	0.57	400	73	18.25	2.58:1	5.16:1		32.24	30.70
F-28375	G-29375	4000 ct	1000 ct	250	125	20	0.57	400	120	30	2.1	4.1		32.24	30.70
F-28380	G-29380	*4000 ct	8000 ct	-	125	20	0.57	400	1070	-	1.1:1	-		35.48	33.69
F-28385	G-29385	5000 ct	500 ct	125	125	20	0.5	540	65	16.25	3.16:1	6.32:1		32.24	30.70
F-28390	G-29390	5000 ct	5000 ct	1250	125	20	0.5	540	650	162.5	1.1	2.1		35.48	33.69
F-28395	G-29395	7500 ct	50 ct	12.5	125	20	0.5	835	6.6	1.65	12.2:1	24.5:1		35.48	33.69
F-28400	G-29400	7500 ct	100 ct	25	125	20	0.4	835	12	3	8.66:1	17.3:1		33.00	31.44
F-28405	G-29405	7500 ct	600 ct	150	125	20	0.4	835	72	18	3.54:1	7.07:1		33.00	31.44
F-28410	G-29410	7500 ct	2500 ct	625	125	20	0.4	835	280	70	1.73:1	3.46:1		33.00	31.44
F-28415	G-29415	*7500 ct	7500 ct	-	125	20	0.4	835	1020	-	1.1	-		33.00	31.44
F-28420	G-29420	8000 ct	12.8 ct	3.2	125	20	0.4	865	1.6	0.4	25:1	50:1		35.48	33.69
F-28425	G-29425	8000 ct	1000 ct	250	125	20	0.4	865	120	30	2.83:1	5.66:1		35.48	33.69
F-28430	G-29430	*8000 ct	1200 ct	-	125	20	0.4	865	160	-	2.58:1	-		35.48	33.69
F-28435	G-29435	*9000 ct	9000 ct	-	125	20	0.4	1160	1160	-	1.1	-		35.48	33.69
F-28440	G-29440	10,000 ct	12.8 ct	3.2	125	20	0.36	1200	1.6	0.4	28:1	56:1		35.48	33.69
F-28445	G-29445	10,000 ct	16 ct	4	125	20	0.36	1200	1.77	0.44	25:1	50:1		33.00	31.44
F-28450	G-29450	10,000 ct	100 ct	25	125	20	0.36	1200	12	3	10:1	20:1		33.00	31.44
F-28455	G-29455	10,000 ct	200 ct	50	125	20	0.36	1200	27	6.75	7.07:1	14.14:1		33.00	31.44
F-28460	G-29460	10,000 ct	500 ct	125	125	20	0.36	1200	65	16.25	4.47:1	8.94:1		33.00	31.44
F-28465	G-29465	10,000 ct	600 ct	150	125	20	0.36	1200	72	18	4.08:1	8.16:1		33.00	31.44
F-28470	G-29470	10,000 ct	1000 ct	250	125	20	0.36	1200	120	30	3.16:1	6.32:1		33.00	31.44
F-28475	G-29475	10,000 ct	1200 ct	300	125	20	0.36	1200	160	40	2.88:1	5.77:1		33.00	31.44
F-28480	G-29480	10,000 ct	1500 ct	375	125	20	0.36	1200	215	53.8	2.58:1	5.16:1		33.10	33.69
F-28485	G-29485	10,000 ct	2000 ct	500	125	20	0.36	1200	260	65	2.24:1	4.47:1		33.10	31.44
F-28490	G-29490	10,000 ct	5000 ct	1250	125	20	0.36	1200	650	162.5	1.41:1	2.83:1		33.10	31.44
F-28495	G-29495	10,000 ct	7500 ct	1875	125	20	0.36	1200	1020	255	1.15:1	2.3:1		33.10	31.44
F-28500	G-29500	10,000 ct	10,000 ct	2500	125	20	0.36	1200	1200	300	1:1	2:1		30.07	28.64
F-28505	G-29505	*10,000 ct	10,000 ct	-	125	20	0.36	1200	1440	-	1.1	-		35.48	33.69
F-28510	G-29510	15,000 ct	400 ct	100	100	15	0.35	1420	43	10.75	6.12:1	12.24:1		33.10	31.44
F-28515	G-29515	15,000 ct	500 ct	125	100	15	0.35	1420	49	12.25	5.48:1	10.95:1		33.10	31.44
F-28520	G-29520	15,000 ct	600 ct	150	100	15	0.35	1420	68	17	5:1	10:1		33.10	31.44
F-28525	G-29525	15,000 ct	10,000 ct	2500	100	15	0.35	1420	1100	275	1.22:1	2.45:1		33.10	31.44
F-28530	G-29530	*15,000 ct	15,000 ct	-	100	15	0.35	1420	1730	-	1.1	-		35.48	33.69
F-28535	G-29535	15,000 ct	15,000 ct	3750	100	15	0.35	1420	1730	433	1.1	2.1		33.10	31.44
F-28540	G-29540	16,000 ct	1000 ct	250	100	15	0.35	1500	115	28.75	4:1	8:1		33.10	31.44
F-28545	G-29545	20,000 ct	500 ct	125	100	15	0.3	1600	60	15	6.33:1	12.65:1		35.48	33.69
F-28550	G-29550	20,000 ct	600 ct	150	100	15	0.3	1600	66	16.5	5.77:1	11.55:1		35.48	33.69
F-28555	G-29555	20,000 ct	800 ct	200	100	15	0.3	1600	94	23.5	5:1	10:1		35.48	33.69
F-28560	G-29560	20,000 ct	1000 ct	250	100	15	0.3	1600	106	26.5	4.47:1	8.94:1		35.48	33.69
F-28565	G-29565	20,000 ct	5000 ct	1250	100	15	0.3	1600	600	150	2:1	4:1		35.48	33.69
F-28570	G-29570	20,000 ct	10,000 ct	2500	100	15	0.3	1600	1100	275	1.41:1	2.83:1		35.48	33.69
F-SHIELD	MU-METAL SHIELD .285" d x .268" h (7.24 mm d x 6.73 mm h) SINGLE SHIELD														3.50
GY-SHIELD	MU-METAL SHIELD .315" d x .275" h (8.0 mm d x 6.99 mm h) USE WITH F-SHIELD FOR DOUBLE SHIELDING														3.50
GXX-SHIELD	MU-METAL SHIELD .35" d x .465" h (8.89 mm d x 11.81 mm h) USE WITH G-SHIELD AND GYY SHIELD FOR TRIPLE SHIELDING														3.50

\*INCLUDES ELECTROSTATIC SHIELD

\*\*\*Discount Prices: 1-9 Net; 10-24 less 10%; 25-49 less 16%; 50-99 less 23%; 100-499 less 30%  
Ordering Instructions: No minimum. Net 30 days F.O.B. Mt. Vernon, New York

INDUCTORS		INDUCTANCE HENRIES	DC CURRENT ma	DC RESISTANCE OHMS	PRICES 1-9***	
F-SERIES	G-SERIES				F SERIES	G SERIES
F-5825	G-6125	SERIES { 10.0 2.75 2.5 .65	0 2 0 4	2250 560	27.32	26.01
F-5830	G-6130	SERIES { 5.5 1.5 1.3 .40	0 2 0 4	1000 250	27.32	26.01
F-5835	G-6135	SERIES { .85 .25 .21 .06	1 6 2 12	240 60	27.32	26.01
F-5840	G-6140	SERIES { .6 .15 .15 .04	0 5 0 10	144 36	27.32	26.01

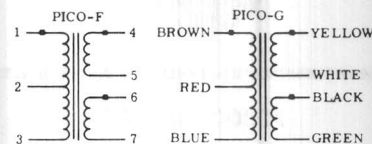
## F SERIES Plug-In



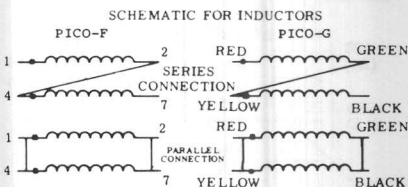
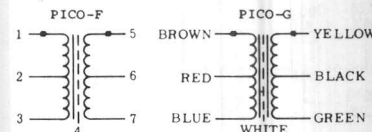
## G SERIES Insulated Leads



SCHEMATIC FOR TRANSFORMERS WITH SPLIT SECONDARIES



SCHEMATIC FOR TRANSFORMERS WITH ELECTROSTATIC SHIELD



## FEATURES

- EXTREME RESISTANCE TO THERMAL SHOCK
- ULTRA MINIATURE SIZE
- PICO IS APPROVED QPL SOURCE (MIL-T-27)
- 5 MAGNETIC SHIELDS AVAILABLE
- ELECTROSTATIC SHIELDING CAN BE ADDED
- VARIATION OF STANDARD DESIGNS AVAILABLE
- SPECIAL PRODUCTION TECHNIQUES ENSURE UNIFORM SIZE AND LEADS WHICH ARE FREE OF ENCAPSULANT. NO MENISCUS IN LEAD AREA.
- EVERY UNIT IN THIS CATALOG CAN BE MADE WITH A 300 THERMAL CYCLE GUARANTEE USING PICO'S SPECIAL SR CONSTRUCTION. CONTACT FACTORY FOR DETAILS.

This Product is Patented

## INDUCTORS

ALL INDUCTORS HAVE SPLIT WINDINGS AND MEASUREMENTS ARE LISTED FOR BOTH SERIES AND PARALLEL CONNECTIONS. TWO VALUES OF INDUCTANCE, EACH AT A PARTICULAR VALUE OF D.C. CURRENT, ARE LISTED FOR EACH INDUCTOR.

Delivery—  
stock to one week

For immediate engineering assistance or to place an order—Call Toll Free 800-431-1064

# PICO Electronics, Inc.

453 N. MacQuesten Pkwy., Mt. Vernon, N.Y. 10552 • 914-699-5514 • FAX 914-699-5565

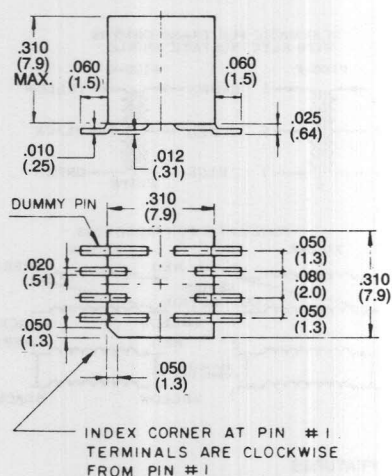
## **SURFACE MOUNT**

**PICO surface mount units utilize materials and methods to withstand extreme temperature (220°C) of vapor phase, I.R., and other reflow procedures without degradation of electrical or mechanical characteristics.**

## PICO's ultra-miniature transformers



## 70000 SERIES



All dimensions are in inches. ( ) = MM

## SPECIFICATIONS

- **MIL-T-27:** .....  
All units manufactured to MIL-T-27,  
Military Designation is TF5R21ZZ  
for Transformers, TF5R20ZZ for  
Inductors.
- **FREQUENCY RESPONSE:** .....  
±3db, 400 Hz-250 KHz at 1.0 Milli watt.
- **MAXIMUM DISTORTION:** .....  
5% With Rated Power Level at 1 KHz  
and 400 Hz.
- **DIELECTRIC STRENGTH:** .....  
All Units Tested at 200 v RMS.
- **INSULATION RESISTANCE:** .....  
Greater Than 10,000 Megohms at 300  
V DC.
- **WEIGHT:** .....  
1.5 Grams
- **OPERATING TEMPERATURE:**...  
-55°c. to +105°c (All Units Can be  
Supplied to Class S Requirements,  
+130°c).
- **TERMINALS:** .....  
Copper Clad Steel, Tin Dipped.  
Solderability per MIL-STD-202  
Method 208.
- **THERMAL SHOCK:** .....  
25 Cycles, Method 107D, MIL-STD-  
202E, Test Condition A-1.

PICO PART NUMBER	PRIMARY IMPEDANCE OHMS	SECONDARY IMPEDANCE OHMS		POWER MILLIWATTS		PRIMARY UNBAL DC CURRENT ma	PRIMARY DC RESISTANCE OHMS	SECONDARY DC RESISTANCE OHMS		TURNS/RATIO PRIM/SEC		PICO PRICES 1-9 ***
		SPLIT SER	WINDINGS PAR	1 KHz and higher	400 Hz and higher			SER CONN	PAR CONN	SEC SER CONN	SEC PAR CONN	
70003	10 ct	10 ct	2.5	125	20	11.5	1.1	1.35	.34	1:1	2:1	29.01
70005	20 ct	8 ct	2	125	20	8	2.1	1.28	.32	1.58:1	3.16:1	29.01
70010	20 ct	20 ct	5	125	20	8	2.1	2.56	.64	1:1	2:1	29.01
70015	32 ct	32 ct	8	125	20	6.5	3.52	4.32	1.08	1:1	2:1	29.01
70020	40 ct	40 ct	10	125	20	5.6	4	4.77	1.19	1:1	2:1	28.78
70025	48 ct	16 ct	4	125	20	5.2	4.3	2.3	.58	1.73:1	3.46:1	26.37
70030	50 ct	50 ct	12.5	125	20	5	5.5	6.6	1.65	1:1	2:1	26.37
70035	80 ct	32 ct	8	125	20	4	8.5	4.25	1.06	1.58:1	3.16:1	28.78
70040	100 ct	40 ct	10	125	20	3.6	12.1	4.85	1.21	1.58:1	3.16:1	28.78
70045	100 ct	100 ct	25	125	20	3.6	12.1	12	3	1:1	2:1	26.37
70050	120 ct	12.8 ct	3.2	125	20	3.3	13.2	1.6	.4	3.06:1	6.12:1	26.37
70055	120 ct	60 ct	15	125	20	3.3	13.2	7.3	1.83	1.41:1	2.83:1	31.54
70060	120 ct	120 ct	30	125	20	3.3	13.2	16	4	1:1	2:1	31.54
70065	150 ct	12 ct	3	125	20	3	15	1.56	.39	3.54:1	7.07:1	30.53
70070	150 ct	50 ct	12.5	125	20	3	15	6.6	1.65	1.73:1	3.46:1	31.54
70075	150 ct	100 ct	25	125	20	3	15	14.5	3.63	1.22:1	2.45:1	31.54
70080	150 ct	150 ct	37.5	125	20	3	15	18.3	4.58	1:1	2:1	31.54
70085	150 ct	600 ct	150	125	20	3	15	72	18	1:2	1:1	31.54
70090	200 ct	200 ct	50	125	20	2.5	22	25.8	6.7	1:1	2:1	31.54
70095	300 ct	12 ct	3	125	20	2	33	1.56	.39	5:1	10:1	31.54
70100	300 ct	50 ct	12.5	125	20	2	33	6.6	1.65	2.45:1	4.9:1	31.54
70105	300 ct	150 ct	37.5	125	20	2	33	18.3	4.58	1:1.41	2.83:1	31.54
77110	300 ct	300 ct	75	125	20	2	33	40.3	10.08	1:1	2:1	31.54
70115	300 ct	600 ct	150	125	20	2	33	72	18	1:1.41	1.41:1	28.67
70120	320 ct	12.8 ct	3.2	125	20	2	34	1.6	0.4	5:1	10:1	33.82
70125	400 ct	40 ct	10	125	20	1.8	49	4.7	1.18	3.16:1	6.32:1	33.82
70130	400 ct	120 ct	30	125	20	1.8	49	16.3	4.08	1.83:1	3.65:1	33.82
70135	400 ct	200 ct	50	125	20	1.8	49	27.3	6.83	1.41:1	2.83:1	33.82
70140	400 ct	400 ct	100	125	20	1.8	49	49	12.25	1:1	2:1	30.75
70145	400 ct	1000 ct	250	125	20	1.8	48	120	30	1:1.58	1.28:1	33.82
70150	400 ct	2000 ct	500	125	20	1.8	49	270	67.5	1:2.24	1:1.12	33.82
70155	400 ct	4000 ct	1000	125	20	1.8	49	476	119	1:3.16	1:1.58	33.82
70160	500 ct	12.8 ct	3.2	125	20	1.6	54	1.6	0.4	6.25:1	12.5:1	30.75
70165	500 ct	16 ct	4	125	20	1.6	54	2.3	0.58	5.6:1	11.2:1	30

\*INCLUDES ELECTROSTATIC SHIELD

\*\*\*Discount Prices: 1-9 Net; 10-24 less 10%; 25-49 less 16%; 50-99 less 23%; 100-499 less 30%  
Ordering Instructions: No minimum. Net 30 days F.O.B. Mt. Vernon, New York.

**Delivery—  
stock to one week**

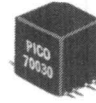
*For immediate engineering assistance or to place an order—Call Toll Free 800-431-1064*

# PICO Electronics, Inc.

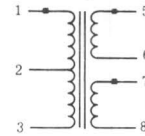
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# SURFACE MOUNT

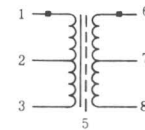
## 70000 SERIES



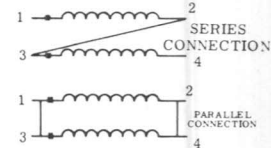
SCHEMATIC FOR TRANSFORMERS WITH SPLIT SECONDARIES



SCHEMATIC FOR TRANSFORMERS WITH ELECTROSTATIC SHIELD



SCHEMATIC FOR INDUCTORS



### FEATURES

- EXTREME RESISTANCE TO THERMAL SHOCK
- ULTRA MINIATURE SIZE
- PICO IS APPROVED QPL SOURCE (MIL-T-27)
- MAGNETIC SHIELD DESIGN AVAILABLE
- ELECTROSTATIC SHIELDING CAN BE ADDED
- VARIATION OF STANDARD DESIGNS AVAILABLE
- SPECIAL PRODUCTION TECHNIQUES ENSURE UNIFORM SIZE AND LEADS WHICH ARE FREE OF ENCAPSULANT. NO MENISCUS IN LEAD AREA.
- EVERY UNIT IN THIS CATALOG CAN BE MADE WITH A 300 THERMAL CYCLE GUARANTEE USING PICO'S SPECIAL SR CONSTRUCTION. CONTACT FACTORY FOR DETAILS.

THIS PRODUCT IS PATENTED

### INDUCTORS

ALL INDUCTORS HAVE SPLIT WINDINGS AND MEASUREMENTS ARE LISTED FOR BOTH SERIES AND PARALLEL CONNECTIONS. TWO VALUES OF INDUCTANCE, EACH AT A PARTICULAR VALUE OF D.C. CURRENT, ARE LISTED FOR EACH INDUCTOR.

PICO PART NUMBER	PRIMARY IMPEDANCE OHMS	SECONDARY IMPEDANCE OHMS		POWER MILLIWATTS		PRIMARY UNBAL DC CURRENT ma	PRIMARY DC RESISTANCE OHMS	SECONDARY DC RESISTANCE OHMS		TURNS/RATIO PRIM/SEC		PICO PRICES 1-9 ***
		SPLIT WINDINGS SER	PAR	1 KHz and higher	400 Hz and higher			SER CONN	PAR CONN	SEC SER CONN	SEC PAR CONN	
70345	2500 ct	2500 ct	625	125	20	0.75	280	280	70	1:1	2:1	33.82
70350	3000 ct	3000 ct	725	125	20	0.65	330	330	82.5	1:1	2:1	33.82
70355	*3000 ct	3000 ct	-	125	20	0.65	330	330	-	1:1	-	33.82
70360	3600 ct	3600 ct	900	125	20	0.6	370	450	112.5	1:1	2:1	33.82
70365	4000 ct	16 ct	4	125	20	0.57	400	2.3	0.58	15.8:1	31.6:1	33.82
70370	4000 ct	600 ct	150	125	20	0.57	400	73	18.25	2.58:1	5.16:1	33.82
70375	4000 ct	1000 ct	250	125	20	0.57	400	120	30	2:1	4:1	33.82
70380	*4000 ct	8000 ct	-	125	20	0.57	400	1070	-	1:1.41	-	37.18
70385	5000 ct	500 ct	125	125	20	0.5	540	65	16.25	3.16:1	6.32:1	33.82
70390	5000 ct	5000 ct	1250	125	20	0.5	540	650	162.5	1:1	2:1	33.82
70395	7500 ct	50 ct	12.5	125	20	0.5	835	6.6	1.65	12.2:1	24.5:1	37.18
70400	7500 ct	100 ct	25	125	20	0.4	835	12	3	8.66:1	17.3:1	34.16
70405	7500 ct	600 ct	150	125	20	0.4	835	72	18	3.54:1	7.07:1	34.16
70410	7500 ct	2500 ct	625	125	20	0.4	835	280	70	1.73:1	3.46:1	34.16
70415	*7500 ct	7500 ct	-	125	20	0.4	835	1020	-	1:1	-	34.16
70420	8000 ct	8000 ct	3.2	125	20	0.4	865	1.6	0.4	25:1	50:1	37.18
70425	8000 ct	1000 ct	250	125	20	0.4	865	120	30	2.83:1	5.66:1	37.18
70430	*8000 ct	1200 ct	-	125	20	0.4	865	160	-	2.58:1	-	37.18
70435	*9000 ct	9000 ct	-	125	20	0.4	1160	1160	-	1:1	-	37.18
70440	10,000 ct	12.8 ct	3.2	125	20	0.36	1200	1.6	0.4	28:1	56:1	37.18
70445	10,000 ct	16 ct	4	125	20	0.36	1200	1.77	0.44	25:1	50:1	34.16
70450	10,000 ct	100 ct	25	125	20	0.36	1200	12	3	10:1	20:1	34.16
70455	10,000 ct	200 ct	50	125	20	0.36	1200	27	6.75	7.07:1	14.14:1	34.16
70460	10,000 ct	500 ct	125	125	20	0.36	1200	65	16.25	4.47:1	8.94:1	34.16
70465	10,000 ct	600 ct	150	125	20	0.36	1200	72	18	4.08:1	8.16:1	34.16
70470	10,000 ct	1000 ct	250	125	20	0.36	1200	120	30	3.16:1	6.32:1	34.16
70475	10,000 ct	1200 ct	300	125	20	0.36	1200	160	40	2.88:1	5.77:1	34.16
70480	10,000 ct	1500 ct	375	125	20	0.36	1200	215	53.8	2.58:1	5.16:1	34.71
70485	10,000 ct	2000 ct	500	125	20	0.36	1200	260	65	2.24:1	4.47:1	34.71
70490	10,000 ct	5000 ct	1250	125	20	0.36	1200	650	162.5	1.41:1	2.83:1	34.71
70495	10,000 ct	7500 ct	1875	125	20	0.36	1200	1020	255	1.15:1	2.3:1	34.71
70500	10,000 ct	10,000 ct	2500	125	20	0.36	1200	1200	300	1:1	2:1	31.54
70505	*10,000 ct	10,000 ct	-	125	20	0.36	1200	1440	-	1:1	-	37.18
70510	15,000 ct	400 ct	100	100	15	0.35	1420	43	10.75	6.12:1	12.24:1	34.16
70515	15,000 ct	500 ct	125	100	15	0.35	1420	49	12.25	5.48:1	10.95:1	34.16
70520	15,000 ct	600 ct	150	100	15	0.35	1420	68	17	5:1	10:1	34.16
70525	15,000 ct	10,000 ct	2500	100	15	0.35	1420	1100	275	1.22:1	2.45:1	34.16
70530	*15,000 ct	15,000 ct	-	100	15	0.35	1420	1730	-	1:1	-	37.18
70535	15,000 ct	15,000 ct	3750	100	15	0.35	1420	1730	433	1:1	2:1	34.71
70540	16,000 ct	1000 ct	250	100	15	0.35	1500	115	28.75	4:1	8:1	34.71
70545	20,000 ct	500 ct	125	100	15	0.3	1600	60	15	6.33:1	12.65:1	37.18
70550	20,000 ct	600 ct	150	100	15	0.3	1600	66	16.5	5.77:1	11.55:1	37.18
70555	20,000 ct	800 ct	200	100	15	0.3	1600	94	23.5	5:1	10:1	37.18
70560	20,000 ct	1000 ct	250	100	15	0.3	1600	106	26.5	4.47:1	8.94:1	37.18
70565	20,000 ct	5000 ct	1250	100	15	0.3	1600	600	150	2:1	4:1	37.18
70570	20,000 ct	10,000 ct	2500	100	15	0.3	1600	1100	275	1.41:1	2.83:1	37.18

\*INCLUDES ELECTROSTATIC SHIELD

\*\*\*Discount Prices: 1-9 Net: 10-24 less 10%; 25-49 less 16%; 50-99 less 23%; 100-499 less 30%  
Ordering Instructions: No minimum. Net 30 days F.O.B. Mt. Vernon, New York.

### INDUCTORS

PART NUMBER	INDUCTANCE	DC CURRENT ma	DC RESISTANCE OHMS	PRICES 1-9***
70825	SERIES { 10.0	0	2250	30.02
	PARALLEL { 2.75	2		
	PARALLEL { .65	4		
70830	SERIES { 5.5	0	1000	30.02
	PARALLEL { 1.5	2		
	PARALLEL { .40	4		
70835	SERIES { .85	1	240	30.02
	PARALLEL { .25	6		
	PARALLEL { .06	12		
70840	SERIES { .6	0	144	30.02
	PARALLEL { .15	5		
	PARALLEL { .04	10		

For immediate engineering assistance or to place an order—Call Toll Free 800-431-1064

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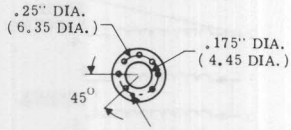
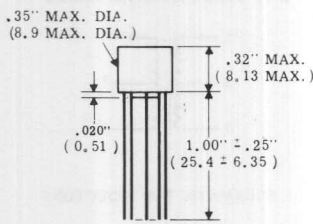
Delivery—  
stock to one week



# PICO's ultra-miniature transformers

For Surface Mount versions of  
this series see pages 10 and 11

## W SERIES Plug-In



WHITE DOT AT TERMINAL #1  
TERMINALS CLOCKWISE FROM  
PIN #1

DIMENSIONS ARE IN INCHES (MM)

### SPECIFICATIONS

- **MIL-T-27:**.....  
All units manufactured to MIL-T-27,  
Military Designation is TF5R21ZZ  
for Transformers, TF5R20ZZ for  
Inductors.
- **FREQUENCY RESPONSE:**.....  
±3db, 400 Hz-100 KHz at 1.0  
Milliwatt.
- **MAXIMUM DISTORTION:**.....  
5% With Rated Power Level at 1  
KHz and 400 Hz.
- **DIELECTRIC STRENGTH:**.....  
All Units Tested at 200 V RMS.
- **INSULATION RESISTANCE:**....  
Greater Than 10,000 Megohms at  
300 V DC.
- **WEIGHT:**.....  
2.5 Grams
- **OPERATING TEMPERATURE:**  
-55°c to +105°c (All Units Can be  
Supplied to Class S Requirements,  
+130°c).
- **TERMINALS:**.....  
Solid .016 Diameter Conductor.  
Conductor is Copper Clad Steel.  
Tinned 100%. Electroplated Per Mil-  
T-10727A and ASTM CCS B452.
- **THERMAL SHOCK:**.....  
25 Cycles, Method 107D, MIL-STD-  
202E, Test Condition A-1.

PICO PART NUMBER	PRIMARY IMPEDANCE OHMS	SECONDARY IMPEDANCE OHMS		POWER WATTS		PRIMARY UNBAL DC CURRENT ma	PRIM DC RESIST OHMS	SECONDARY DC RESISTANCE OHMS		TURNS/RATIO PRIM/SEC		PICO PRICES 1-9 ***
		SPLIT WINDINGS SER	PAR	1 KHz and higher	400 Hz and higher			SER CONN	PAR CONN	SER SER CONN	SEC PAR CONN	
W-26003	10 ct	10 ct	2.5	.4	.075	31.6	1.1	1.3	.33	1:1	2:1	20.41
W-26005	20 ct	8 ct	2	.4	.075	22.3	2.2	1	.25	1.58:1	3.16:1	20.41
W-26010	20 ct	20 ct	5	.4	.075	22.3	2.2	2.6	.65	1:1	2:1	20.41
W-26015	32 ct	32 ct	8	.4	.075	17.6	3.5	4.2	1.05	1:1	2:1	20.41
W-26020	40 ct	40 ct	10	.4	.075	15.8	4	4.5	1.2	1:1	2:1	20.41
W-26025	48 ct	16 ct	4	.4	.075	14.4	5.3	1.9	.48	1.73:1	3.46:1	21.64
W-26030	50 ct	50 ct	12.5	.4	.075	14.1	5.6	6.5	1.6	1:1	2:1	21.64
W-26035	80 ct	32 ct	8	.4	.075	11.1	8	4	1	1.58:1	3.16:1	25.72
W-26040	100 ct	40 ct	10	.4	.075	10	10	4.5	1.2	1.58:1	3.16:1	21.64
W-26045	100 ct	100 ct	25	.4	.075	10	10	12	3	1:1	2:1	21.64
W-26050	120 ct	12.8 ct	3.2	.4	.075	9.1	12	1.5	.38	3.06:1	6.12:1	19.47
W-26055	120 ct	60 ct	15	.4	.075	9.1	12	7.2	1.8	1.41:1	2.83:1	25.72
W-26060	120 ct	120 ct	30	.4	.075	9.1	12	14.5	3.6	1:1	2:1	25.72
W-26065	150 ct	12 ct	3	.4	.075	8.2	15	1.5	.38	3.54:1	7.08:1	19.47
W-26070	150 ct	50 ct	12.5	.4	.075	8.2	15	6	1.5	1.73:1	3.46:1	21.64
W-26075	150 ct	100 ct	25	.4	.075	8.2	15	12	3	1.22:1	2.45:1	21.64
W-26080	150 ct	150 ct	37.5	.4	.075	8.2	15	16.8	4.2	1:1	2:1	25.72
W-26085	150 ct	600 ct	150	.4	.075	8.2	15	70	17.5	1:2	1:1	21.64
W-26090	200 ct	200 ct	50	.4	.075	7	20	24	6	1:1	2:1	21.64
W-26095	300 ct	12ct	3	.4	.075	5.8	30	1.5	.38	5:1	10:1	19.47
W-26100	300 ct	50 ct	12.5	.4	.075	5.8	30	6	1.5	2.45:1	4.9:1	21.64
W-26105	300 ct	150 ct	37.5	.4	.075	5.8	30	18	4.5	1.41:1	2.83:1	21.64
W-26110	300 ct	300 ct	75	.4	.075	5.8	30	36	9	1:1	2:1	25.72
W-26115	300 ct	600 ct	150	.4	.075	5.8	30	72	18	1:1.41	1.41:1	19.47
W-26120	320 ct	12.8 ct	3.2	.4	.075	5.6	32	1.5	.38	5:1	10:1	19.47
W-26125	400 ct	40 ct	10	.4	.075	5	40	4.5	1:1	3.16:1	6.32:1	25.72
W-26130	400 ct	120 ct	30	.4	.075	5	40	14	3.5	1.83:1	3.65:1	25.72
W-26135	400 ct	200 ct	50	.4	.075	5	40	24	6	1.41:1	2.83:1	21.64
W-26140	400 ct	400 ct	100	.4	.075	5	40	48	12	1:1	2:1	25.72
W-26145	400 ct	1000 ct	250	.4	.075	5	40	120	30	1:1.58	1.26:1	29.49
W-26150	400 ct	2000 ct	500	.4	.075	5	40	240	60	1:2.24	1:1.12	29.49
W-26155	400 ct	4000 ct	1000	.4	.075	5	40	480	120	1:3.16	1:1.58	26.65
W-26160	500 ct	12.8 ct	3.2	.4	.075	4.5	50	1.5	.38	6.25:1	12.5:1	22.57
W-26165	500 ct	16 ct	4	.4	.075	4.5	50	2	.5	5.6:1	11.2:1	22.57
W-26170	500 ct	50 ct	12.5	.4	.075	4.5	50	6	1.5	3.16:1	6.32:1	22.57
W-26175	500 ct	150 ct	37.5	.4	.075	4.5	50	18	4.5	1.83:1	3.65:1	22.57
W-26180	500 ct	500 ct	125	.4	.075	4.5	50	60	15	1:1	2:1	22.57
W-26185	*500 ct	500 ct	-	.4	.075	4.5	50	60	-	1:1	-	22.57
W-26190	500 ct	600 ct	150	.4	.075	4.5	50	72	18	1:1.1	1.83:1	22.57
W-26195	600 ct	12.8 ct	3.2	.4	.075	4.1	60	1.5	.38	6.85:1	13.7:1	19.47
W-26200	600 ct	30 ct	7.5	.4	.075	4.1	60	3.6	.9	4.47:1	8.94:1	20.41
W-26205	600 ct	48 ct	12	.4	.075	4.1	60	5.8	1.45	3.54:1	7.07:1	20.41
W-26210	600 ct	200 ct	50	.4	.075	4.1	60	24	6	1.73:1	3.46:1	20.41
W-26215	600 ct	600 ct	150	.4	.075	4.1	60	72	18	1:1	2:1	20.41
W-26220	*600 ct	600 ct	-	.4	.075	4.1	60	72	-	1:1	-	22.58
W-26225	600 ct	1200 ct	300	.4	.075	4.1	60	144	36	1:1.41	1.41:1	20.41
W-26230	640 ct	12.8 ct	3.2	.4	.075	3.9	64	1.5	.38	7.07:1	14.14:1	20.41
W-26235	700 ct	100 ct	25	.4	.075	3.8	70	12	3	2.65:1	5.29:1	20.41
W-26240	800 ct	12.8 ct	3.2	.4	.075	3.5	80	1.5	.38	7.9:1	15.8:1	20.41
W-26245	800 ct	48 ct	12	.4	.075	3.5	80	5.8	1.45	4.08:1	8.16:1	22.58
W-26250	800 ct	800 ct	200	.4	.075	3.5	80	96	24	1:1	2:1	20.41
W-26255	900 ct	600 ct	150	.4	.075	3.3	90	72	18	1.22:1	2.45:1	20.41
W-26260	1000 ct	12 ct	3	.4	.075	3.2	100	1.5	.38	9.13:1	18.3:1	20.41
W-26265	1000 ct	50 ct	12.5	.4	.075	3.2	100	6	1.5	4.47:1	8.94:1	22.58
W-26270	1000 ct	1000 ct	250	.4	.075	3.2	100	120	30	1:1	2:1	22.58
W-26275	1060 ct	12.8 ct	3.2	.4	.075	3.1	106	1.5	.38	9.1:1	18.2:1	20.41
W-26280	1200 ct	12.8 ct	3.2	.4	.075	2.9	120	1.5	.38	9.68:1	19.4:1	18.38
W-26285	1200 ct	500 ct	125	.4	.075	2.9	120	60	15	1.55:1	3.1:1	18.38
W-26290	1200 ct	1200 ct	300	.4	.075	2.9	120	140	35	1:1	2:1	18.38
W-26295	*1200 ct	1200 ct	-	.4	.075	2.9	120	140	-	1:1	-	25.15
W-26300	1500 ct	12 ct	3	.4	.075	2.6	150	1.5	.38	11.2:1	22.4:1	20.41
W-26305	1500 ct	500 ct	125	.4	.075	2.6	150	60	15	1.73:1	3.46:1	22.58
W-26310	*1500 ct	600 ct	-	.4	.075	2.6	150	72	-	1.58:1	-	22.58
W-26315	*1500 ct	1500 ct	-	.4	.075	2.6	150	180	-	1:1	-	22.58
W-26320	1600 ct	12.8 ct	3.2	.4	.075	2.5	160	1.5	.38	11.2:1	22.4:1	20.41
W-26325	2000 ct	8 ct	2	.4	.075	2.2	200	1	.25	15.8:1	31.6:1	26.65
W-26330	2000 ct	2000 ct	500	.4	.075	2.2	200	240	60	1:1	2:1	26.65
W-26335	*2000 ct	2000 ct	-	.4	.075	2.2	200	240	-	1:1	-	29.49
W-26340	2000 ct	8000 ct	2000	.4	.075	2.2	200	960	240	1:2	1:1	26.65
W-26345	2500 ct	2500 ct	625	.4	.075	2	250	300	75	1:1	2:1	26.65

\*\*\*Discount Prices: 1-9 Net; 10-24 less 10%; 25-49 less 16%  
50-99 less 23%; 100-499 less 30%

Ordering Instructions: No minimum. Net 30 days F.O.B. Mt. Vernon, New York.

\*INCLUDES ELECTROSTATIC SHIELD

For immediate engineering assistance or to place an order—Call Toll Free 800-431-1064

## PICO Electronics, Inc.

453 N. MacQuesten Pkwy., Mt. Vernon, N.Y. 10552 • 914-699-5514 • FAX 914-699-5565

Delivery—  
stock to one week



PICO PART NUMBER W Series Plug-In	PRIMARY IMPED OHMS	SECONDARY IMPEDANCE OHMS		POWER WATTS		PRIMARY UNBAL DC CURRENT ma	PRIM DC RESIST OHMS	SECONDARY DC RESISTANCE OHMS		TURNS/RATIO PRIM/SEC		PICO PRICES 1-9 *** W-Series
		SPLIT WINDINGS SER	PAR	1 KHz and higher	400 Hz and higher			SER CONN	PAR CONN	SER CONN	SEC PAR CONN	
W-26350	3000 ct	3000 ct	725	.4	.075	1.8	300	360	90	1:1	2:1	21.64
W-26355	*3000 ct	3000 ct	—	.4	.075	1.8	300	360	—	1:1	—	29.49
W-26360	3600 ct	3600 ct	900	.4	.075	1.7	360	432	108	1:1	2:1	21.64
W-26365	4000 ct	16 ct	4	.4	.075	1.6	400	1.9	.47	15.8:1	31.6:1	26.65
W-26370	4000 ct	600 ct	150	.4	.075	1.6	400	72	18	2.58:1	5.16:1	26.65
W-26375	4000 ct	1000 ct	250	.4	.075	1.6	400	120	30	2:1	4:1	29.49
W-26380	*4000 ct	8000 ct	—	.4	.075	1.6	400	960	—	1:1.41	—	29.49
W-26385	5000 ct	500 ct	125	.4	.075	1.4	500	60	15	3.16:1	6.32:1	22.58
W-26390	5000 ct	5000 ct	1250	.4	.075	1.4	500	600	150	1:1	2:1	22.58
W-26395	7500 ct	50 ct	12.5	.33	.075	1.2	750	6	1.5	12.2:1	24.5:1	22.58
W-26400	7500 ct	100 ct	25	.33	.075	1.2	750	12	3	8.66:1	17.3:1	22.58
W-26405	7500 ct	600 ct	150	.33	.075	1.2	750	72	18	3.54:1	7.07:1	25.14
W-26410	7500 ct	2500 ct	625	.33	.075	1.2	750	300	75	1.73:1	3.46:1	25.14
W-26415	*7500 ct	7500 ct	—	.33	.075	1.2	750	900	—	1:1	—	29.49
W-26420	8000 ct	12.8 ct	3.2	.3	.075	1.1	800	1.5	.38	25:1	50:1	22.58
W-26425	8000 ct	1000 ct	250	.3	.075	1.1	800	120	30	2.83:1	5.66:1	25.14
W-26430	*8000 ct	1200 ct	—	.3	.075	1.1	800	144	—	2.58:1	—	29.49
W-26435	*9000 ct	9000 ct	—	.27	.075	1.1	900	1080	—	1:1	—	29.49
W-26440	10,000 ct	12.8 ct	3.2	.25	.075	1.0	1000	1.5	.38	28:1	56:1	20.41
W-26445	10,000 ct	16 ct	4	.25	.075	1.0	1000	1.92	.48	25:1	50:1	20.41
W-26450	10,000 ct	100 ct	25	.25	.075	1.0	1000	12	3	10:1	20:1	22.58
W-26455	10,000 ct	200 ct	50	.25	.075	1.0	1000	24	6	7.07:1	14.14:1	22.58
W-26460	10,000 ct	500 ct	125	.25	.075	1.0	1000	60	15	4.47:1	8.94:1	22.58
W-26465	10,000 ct	600 ct	150	.25	.075	1.0	1000	72	18	4.08:1	8.16:1	22.58
W-26470	10,000 ct	1000 ct	250	.25	.075	1.0	1000	120	30	3.16:1	6.32:1	22.58
W-26475	10,000 ct	1200 ct	300	.25	.075	1.0	1000	144	36	2.89:1	5.77:1	26.65
W-26480	10,000 ct	1500 ct	375	.25	.075	1.0	1000	180	45	2.58:1	5.16:1	26.65
W-26485	10,000 ct	2000 ct	500	.25	.075	1.0	1000	240	60	2.24:1	4.47:1	26.09
W-26490	10,000 ct	5000 ct	1250	.25	.075	1.0	1000	600	150	1.41:1	2.83:1	26.09
W-26495	10,000 ct	7500 ct	1875	.25	.075	1.0	1000	900	225	1.15:1	2.3:1	26.65
W-26500	10,000 ct	10,000 ct	2500	.25	.075	1.0	1000	1200	300	1:1	2:1	25.72
W-26505	*10,000 ct	10,000 ct	—	.25	.075	1.0	1000	1200	—	1:1	—	29.49
W-26510	15,000 ct	400 ct	100	.16	.075	.82	1500	48	12	6.12:1	12.24:1	25.72
W-26515	15,000 ct	500 ct	125	.16	.075	.82	1500	60	15	5.48:1	10.95:1	25.72
W-26520	15,000 ct	600 ct	150	.16	.075	.82	1500	72	18	5:1	10:1	25.72
W-26525	15,000 ct	10,000 ct	2500	.16	.075	.82	1500	1200	300	1.22:1	2.45:1	25.72
W-26530	*15,000 ct	15,000 ct	—	.16	.075	.82	1500	1800	—	1:1	—	29.49
W-26535	15,000 ct	15,000 ct	3750	.16	.075	.82	1500	1800	450	1:1	2:1	26.55
W-26540	16,000 ct	1,000 ct	250	.15	.075	.8	1600	120	30	4:1	8:1	26.55
W-26545	20,000 ct	500 ct	125	.125	.075	.7	2000	60	15	6.33:1	12.65:1	25.72
W-26550	20,000 ct	600 ct	150	.125	.075	.7	2000	72	18	5.77:1	11.55:1	25.72
W-26555	20,000 ct	800 ct	200	.125	.075	.7	2000	96	24	5:1	10:1	23.51
W-26560	20,000 ct	1000 ct	250	.125	.075	.7	2000	120	30	4.47:1	8.94:1	29.49
W-26565	20,000 ct	5000 ct	1250	.125	.075	.7	2000	600	150	2:1	4:1	25.72
W-26570	20,000 ct	10,000 ct	2500	.125	.075	.7	2000	1200	300	1.41:1	2.83:1	25.72
W-26575	*20,000 ct	20,000 ct	—	.125	.075	.7	2000	2400	—	1:1	—	29.49
W-26580	25,000 ct	500 ct	125	.1	.075	.63	2500	60	15	7.07:1	14.14:1	26.65
W-26585	25,000 ct	1000 ct	250	.1	.075	.63	2500	120	30	5:1	10:1	26.65
W-26590	30,000 ct	50 ct	12.5	.083	.075	.58	3000	6	1.5	24.5:1	49:1	26.65
W-26595	30,000 ct	1200 ct	300	.083	.075	.58	3000	144	36	5:1	10:1	26.65
W-26600	30,000 ct	500 ct	125	.083	.075	.58	3000	60	15	7.75:1	15.5:1	26.65
W-26605	30,000 ct	200 ct	50	.083	.075	.58	3000	24	6	12.25:1	24.5:1	26.65
W-26610	30,000 ct	5,000 ct	1250	.083	.075	.58	3000	600	150	2.45:1	4.9:1	26.65
W-26615	30,000 ct	10,000 ct	2500	.083	.075	.58	3000	1200	300	1.73:1	3.46:1	26.65
W-26620	*30,000 ct	30,000 ct	—	.083	.075	.58	3000	3600	—	1:1	—	29.49
W-26625	40,000 ct	400 ct	100	.062	.062	.5	4000	48	12	10:1	20:1	29.49
W-SHIELD MU-METAL SHIELD .37"D x .32"H (9.4mmD x 8.1mmH) SINGLE SHIELD												3.52
WXX-SHIELD MU-METAL SHIELD .395"D x .33"H (10mmD x 8.4mmH) USE WITH W SHIELD FOR DOUBLE SHIELDING												3.52

\*INCLUDES ELECTROSTATIC SHIELD

#### INDUCTORS

ALL INDUCTORS HAVE SPLIT WINDINGS AND MEASUREMENTS ARE LISTED FOR BOTH SERIES AND PARALLEL CONNECTIONS. TWO VALUES OF INDUCTANCE, EACH AT A PARTICULAR VALUE OF D.C. CURRENT, ARE LISTED FOR EACH INDUCTOR.

PICO PART NUMBER	INDUCTANCE SERIES	DC CURRENT ma	DC RESISTANCE OHMS	PRICES 1-9***
W-26705	SERIES { 0.1 .08 .025 .02	4 10 8 20	25	20.41
	PARALLEL { 0.9 0.5 .23 .13	2 6 4 12	6.5	
W-26710	SERIES { 0.9 0.5 .23 .13	2 6 4 12	105	20.41
	PARALLEL { 2.5 0.9 0.6 0.23	2 4 4 8	26	
W-26715	SERIES { 2.5 0.9 0.6 0.23	2 4 4 8	630	20.41
	PARALLEL { 4.5 1.2 1.1 0.3	2 4 4 8	160	
W-26720	SERIES { 4.5 1.2 1.1 0.3	2 4 4 8	2300	21.67
	PARALLEL { 4.5 1.2 1.1 0.3	2 4 4 8	575	

\*\*\*Discount Prices: 1-9 Net;  
10-24 less 10%; 25-49 less 16%;  
50-99 less 23%; 100-499 less 30%

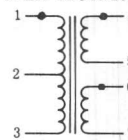
Ordering Instructions:  
No minimum. Net 30 days  
F.O.B. Mt. Vernon, New York.

For immediate  
engineering  
assistance  
or to place  
an order—  
Call Toll Free  
800-431-1064

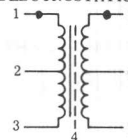
## PICO's ultra-miniature transformers

### W SERIES Plug-In

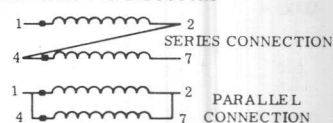
SCHEMATICS FOR TRANSFORMERS  
WITH SPLIT SECONDARIES



SCHEMATIC FOR TRANSFORMERS  
WITH ELECTROSTATIC SHIELD



SCHEMATIC FOR INDUCTORS



#### FEATURES

- EXTREME RESISTANCE TO THERMAL SHOCK
- ULTRA MINIATURE SIZE
- PICO IS APPROVED QPL SOURCE (MIL-T-27)
- MAGNETIC SHIELDS AVAILABLE
- ELECTROSTATIC SHIELDING CAN BE ADDED
- VARIATION OF STANDARD DESIGNS AVAILABLE
- SPECIAL PRODUCTION TECHNIQUES ENSURE UNIFORM SIZE AND LEADS WHICH ARE FREE OF ENCAPSULANT. NO MENISCUS IN LEAD AREA.
- EVERY UNIT IN THIS CATALOG CAN BE MADE WITH A 300 THERMAL CYCLE GUARANTEE USING PICO'S SPECIAL SR CONSTRUCTION. CONTACT FACTORY FOR DETAILS.

THIS PRODUCT IS PATENTED

Delivery—  
stock to one week

**PICO**  
Electronics,  
Inc.

453 N. MacQuesten Pkwy.  
Mt. Vernon, N.Y. 10552

914-699-5514

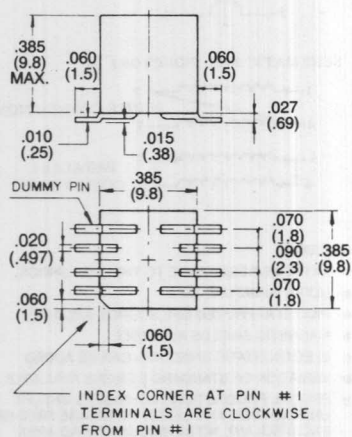
FAX 914-699-5565

**SURFACE MOUNT**  
PICO surface mount units utilize materials and methods to withstand extreme temperature (220°C) of vapor phase, I.R., and other reflow procedures without degradation of electrical or mechanical characteristics.

## PICO's ultra-miniature transformers



### 71000 SERIES



All dimensions are in inches, ( ) = MM

#### SPECIFICATIONS

- **MIL-T-27:** .....  
All units manufactured to MIL-T-27, Military Designation is TF5R21ZZ for Transformers, TF5R20ZZ for Inductors.
- **FREQUENCY RESPONSE:** .....  
±3db, 400 Hz-100 KHz at 1.0 Milliwatt.
- **MAXIMUM DISTORTION:** .....  
5% With Rated Power Level at 1 KHz and 400 Hz.
- **DIELECTRIC STRENGTH:** .....  
All Units Tested at 200 V RMS.
- **INSULATION RESISTANCE:** .....  
Greater Than 10,000 Megohms at 300 V DC.
- **WEIGHT:** .....  
3 Grams
- **OPERATING TEMPERATURE:** .....  
-55°c to +105°c (All Units Can be Supplied to Class S Requirements, +130°c).
- **TERMINALS:** .....  
Copper Clad Steel, Tin Dipped. Solderability per MIL-STD-202 Method 206.
- **THERMAL SHOCK:** .....  
25 Cycles, Method 107D, MIL-STD-202E, Test Condition A-1.

PICO PART NUMBER	PRIMARY IMPED OHMS	SECONDARY IMPEDANCE OHMS		POWER WATTS		PRIMARY UNBAL DC CURRENT ma	PRIM DC RESIST OHMS	SECONDARY DC RESISTANCE OHMS		TURNS/RATIO PRIM/SEC		PICO PRICES 1-9 ***
		SPLIT SER	WINDINGS PAR	1 KHz and higher	400 Hz and higher			SER CONN	PAR CONN	SEC SER CONN	SEC PAR CONN	
71003	10 ct	10 ct	2.5	.4	.075	31.6	1.1	1.3	.33	1:1	2:1	21.41
71005	20 ct	8 ct	2	.4	.075	22.3	2.2	1	.25	1.58:1	3.16:1	21.41
71010	20 ct	20 ct	5	.4	.075	22.3	2.2	2.6	.65	1:1	2:1	21.41
71015	32 ct	32 ct	8	.4	.075	17.6	3.5	4.2	1.05	1:1	2:1	21.41
71020	40 ct	40 ct	10	.4	.075	15.8	4	4.5	1.2	1:1	2:1	21.41
71025	48 ct	16 ct	4	.4	.075	14.4	5.3	1.9	.48	1.73:1	3.46:1	22.72
71030	50 ct	50 ct	12.5	.4	.075	14.1	5.6	6.5	1.6	1:1	2:1	22.72
71035	80 ct	32 ct	8	.4	.075	11.1	8	4	1	1.58:1	3.16:1	26.97
71040	100 ct	40 ct	10	.4	.075	10	10	4.5	1.2	1.58:1	3.16:1	22.72
71045	100 ct	100 ct	25	.4	.075	10	10	12	3	1:1	2:1	20.43
71050	120 ct	12.8 ct	3.2	.4	.075	9.1	12	1.5	.38	3.06:1	6.12:1	20.43
71055	120 ct	60 ct	15	.4	.075	9.1	12	7.2	1.8	1.41:1	2.83:1	26.97
71060	120 ct	120 ct	30	.4	.075	9.1	12	14.5	3.6	1:1	2:1	26.97
71065	150 ct	12 ct	3	.4	.075	8.2	15	1.5	.38	3.54:1	7.08:1	20.43
71070	150 ct	50 ct	12.5	.4	.075	8.2	15	6	1.5	1.73:1	3.46:1	22.72
71075	150 ct	100 ct	25	.4	.075	8.2	15	12	3	1.22:1	2.45:1	22.72
71080	150 ct	150 ct	37.5	.4	.075	8.2	15	16.8	4.2	1:1	2:1	26.97
71085	150 ct	600 ct	150	.4	.075	8.2	15	70	17.5	1:2	1:1	22.72
71090	200 ct	200 ct	50	.4	.075	7	20	24	6	1:1	2:1	22.72
71095	300 ct	12 ct	3	.4	.075	5.8	30	1.5	.38	5:1	10:1	20.43
71100	300 ct	50 ct	12.5	.4	.075	5.8	30	6	1.5	2.45:1	4.9:1	22.72
71105	300 ct	150 ct	37.5	.4	.075	5.8	30	18	4.5	1.41:1	2.83:1	22.72
71110	300 ct	300 ct	75	.4	.075	5.8	30	36	9	1:1	2:1	26.97
71115	300 ct	600 ct	150	.4	.075	5.8	30	72	18	1:1.41	1.41:1	20.43
71120	320 ct	12.8 ct	3.2	.4	.075	5.6	32	1.5	.38	5:1	10:1	20.43
71125	400 ct	40 ct	10	.4	.075	5	40	4.5	1.1	3.16:1	6.32:1	26.97
71130	400 ct	120 ct	30	.4	.075	5	40	14	3.5	1.83:1	3.65:1	26.97
71135	400 ct	200 ct	50	.4	.075	5	40	24	6	1.41:1	2.83:1	22.72
71140	400 ct	400 ct	100	.4	.075	5	40	48	12	1:1	2:1	26.97
71145	400 ct	1000 ct	250	.4	.075	5	40	120	30	1:1.58	1.26:1	30.94
71150	400 ct	2000 ct	500	.4	.075	5	40	240	60	1:2.24	1:1.12	30.94
71155	400 ct	4000 ct	1000	.4	.075	5	40	480	120	1:3.16	1:1.58	27.94
71160	500 ct	12.8 ct	3.2	.4	.075	4.5	50	1.5	.38	6.25:1	12.5:1	23.68
71165	500 ct	16 ct	4	.4	.075	4.5	50	2	.5	5.6:1	11.2:1	23.68
71170	500 ct	50 ct	12.5	.4	.075	4.5	50	6	1.5	3.16:1	6.32:1	23.68
71175	500 ct	150 ct	37.5	.4	.075	4.5	50	16	4.5	1.83:1	3.65:1	23.68
71180	500 ct	500 ct	125	.4	.075	4.5	50	60	15	1:1	2:1	23.68
71185	*500 ct	500 ct	-	.4	.075	4.5	50	60	-	1:1	-	23.68
71190	500 ct	600 ct	150	.4	.075	4.5	50	72	18	1:1.1	1.83:1	23.68
71195	600 ct	12.8 ct	3.2	.4	.075	4.1	60	1.5	.38	6.85:1	13.7:1	20.43
71200	600 ct	30 ct	7.5	.4	.075	4.1	60	3.6	.9	4.47:1	8.94:1	21.41
71205	600 ct	48 ct	12	.4	.075	4.1	60	5.8	1.45	3.54:1	7.07:1	21.41
71210	600 ct	200 ct	50	.4	.075	4.1	60	24	6	1.73:1	3.46:1	21.41
71215	600 ct	600 ct	150	.4	.075	4.1	60	72	18	1:1	2:1	21.41
71220	*600 ct	600 ct	-	.4	.075	4.1	60	72	-	1:1	-	23.68
71225	600 ct	1200 ct	300	.4	.075	4.1	60	144	36	1:1.41	1.41:1	21.41
71230	640 ct	12.8 ct	3.2	.4	.075	3.9	64	1.5	.38	7.07:1	14.4:1	21.41
71235	700 ct	100 ct	25	.4	.075	3.8	70	12	3	2.65:1	5.29:1	21.41
71240	800 ct	12.8 ct	3.2	.4	.075	3.5	80	1.5	.38	7.9:1	15.8:1	21.41
71245	800 ct	48 ct	12	.4	.075	3.5	80	5.8	1.45	4.08:1	8.16:1	31.95
71250	800 ct	800 ct	200	.4	.075	3.5	80	96	24	1:1	2:1	21.41
71255	900 ct	600 ct	150	.4	.075	3.3	90	72	18	1.22:1	2.45:1	21.41
71260	1000 ct	12 ct	3	.4	.075	3.2	100	1.5	.38	9.13:1	18.3:1	21.41
71265	1000 ct	50 ct	12.5	.4	.075	3.2	100	6	1.5	4.47:1	8.94:1	23.68
71270	1000 ct	1000 ct	250	.4	.075	3.2	100	120	30	1:1	2:1	23.68
71275	1060 ct	12.8 ct	3.2	.4	.075	3.1	106	1.5	.38	9.1:1	18.2:1	21.41
71280	1200 ct	12.8 ct	3.2	.4	.075	2.9	120	1.5	.38	9.68:1	19.4:1	19.28
71285	1200 ct	500 ct	125	.4	.075	2.9	120	60	15	1.55:1	3.1:1	19.28
71290	1200 ct	1200 ct	300	.4	.075	2.9	120	140	35	1:1	2:1	19.28
71295	*1200 ct	1200 ct	-	.4	.075	2.9	120	140	-	1:1	-	26.36
71300	1500 ct	12 ct	3	.4	.075	2.6	150	1.5	.38	11.2:1	22.4:1	21.41
71305	1500 ct	500 ct	125	.4	.075	2.6	150	60	15	1.73:1	3.46:1	23.68
71310	*1500 ct	600 ct	-	.4	.075	2.6	150	72	-	1.58:1	-	23.68
71315	*1500 ct	1500 ct	-	.4	.075	2.6	150	180	-	1:1	-	23.68
71320	1600 ct	12.8 ct	3.2	.4	.075	2.5	160	1.5	.38	11.2:1	22.4:1	21.41
71325	2000 ct	8 ct	2	.4	.075	2.2	200	1	.25	15.8:1	31.6:1	27.94
71330	2000 ct	2000 ct	500	.4	.075	2.2	200	240	60	1:1	2:1	27.94
71335	*2000 ct	2000 ct	-	.4	.075	2.2	200	240	-	1:1	-	30.94
71340	2000 ct	8000 ct	2000	.4	.075	2.2	200	960	240	1:2	1:1	27.94
71345	2500 ct	2500 ct	625	.4	.075	2	250	300	75	1:1	2:1	27.94

\*\*\*Discount Prices: 1-9 Net; 10-24 less 10%; 25-49 less 16%; 50-99 less 23%; 100-499 less 30%

Ordering Instructions: No minimum. Net 30 days F.O.B. Mt. Vernon, New York

\*INCLUDES ELECTROSTATIC SHIELD

For immediate engineering assistance or to place an order—Call Toll Free 800-431-1064

# PICO Electronics, Inc.

453 N. MacQuesten Pkwy., Mt. Vernon, N.Y. 10552 • 914-699-5514 • FAX 914-699-5565

Delivery—  
stock to one week

PICO PART NUMBER	PRIMARY IMPED OHMS	SECONDARY IMPEDANCE OHMS		POWER WATTS		PRIMARY UNBAL DC CURRENT ma	PRIM DC RESIST OHMS	SECONDARY DC RESISTANCE OHMS		TURNS/RATIO PRIM/SEC		PICO PRICES 1-9 ***
		SPLIT WINDINGS SER	PAR	1 KHz and higher	400 Hz and higher			SER CONN	PAR CONN	SEC SER CONN	SEC PAR CONN	
71350	3000 ct	3000 ct	725	.4	.075	1.8	300	360	90	1:1	2:1	22.73
71355	*3000 ct	3000 ct	—	.4	.075	1.8	300	360	—	1:1	—	30.94
71360	3600 ct	3600 ct	900	.4	.075	1.7	360	432	108	1:1	2:1	22.73
71365	4000 ct	16 ct	4	.4	.075	1.6	400	72	.47	15.8:1	31.6:1	27.94
71370	4000 ct	600 ct	150	.4	.075	1.6	400	72	18	2.58:1	5.16:1	27.94
71375	4000 ct	1000 ct	250	.4	.075	1.6	400	120	30	2:1	4:1	30.94
71380	*4000 ct	8000 ct	—	.4	.075	1.6	400	960	—	1:1.41	—	30.94
71385	5000 ct	500 ct	125	.4	.075	1.4	500	60	15	3.16:1	6.32:1	23.68
71390	5000 ct	5000 ct	1250	.4	.075	1.4	500	600	150	1:1	2:1	23.68
71395	7500 ct	50 ct	12.5	.33	.075	1.2	750	6	1.5	12.2:1	24.5:1	23.68
71400	7500 ct	100 ct	25	.33	.075	1.2	750	12	3	8.66:1	17.3:1	23.68
71405	7500 ct	600 ct	150	.33	.075	1.2	750	72	18	3.54:1	7.07:1	26.36
71410	7500 ct	2500 ct	625	.33	.075	1.2	750	300	75	1.73:1	3.46:1	26.36
71415	*7500 ct	7500 ct	—	.33	.075	1.2	750	900	—	1:1	—	30.94
71420	8000 ct	12.8 ct	3.2	.3	.075	1.1	800	1.5	.38	25:1	50:1	23.68
71425	8000 ct	1000 ct	250	.3	.075	1.1	800	120	30	2.83:1	5.66:1	26.36
71430	*8000 ct	1200 ct	—	.3	.075	1.1	800	144	—	2.58:1	—	30.94
71435	*9000 ct	9000 ct	—	.27	.075	1.1	900	1080	—	1:1	—	30.94
71440	10,000 ct	12.8 ct	3.2	.25	.075	1.0	1000	1.5	.38	28:1	56:1	21.41
71445	10,000 ct	16 ct	4	.25	.075	1.0	1000	1.92	.48	25:1	50:1	21.41
71450	10,000 ct	100 ct	25	.25	.075	1.0	1000	12	3	10:1	20:1	23.68
71455	10,000 ct	200 ct	50	.25	.075	1.0	1000	24	6	7.07:1	14.14:1	23.68
71460	10,000 ct	500 ct	125	.25	.075	1.0	1000	60	15	4.47:1	8.94:1	23.68
71465	10,000 ct	600 ct	150	.25	.075	1.0	1000	72	18	4.08:1	8.16:1	23.68
71470	10,000 ct	1000 ct	250	.25	.075	1.0	1000	120	30	3.16:1	6.32:1	23.68
71475	10,000 ct	1200 ct	300	.25	.075	1.0	1000	144	36	2.89:1	5.77:1	27.94
71480	10,000 ct	1500 ct	375	.25	.075	1.0	1000	180	45	2.58:1	5.16:1	27.94
71485	10,000 ct	2000 ct	500	.25	.075	1.0	1000	240	60	2.24:1	4.47:1	27.38
71490	10,000 ct	5000 ct	1250	.25	.075	1.0	1000	600	150	1.41:1	2.83:1	27.85
71495	10,000 ct	7500 ct	1875	.25	.075	1.0	1000	900	225	1.15:1	2.3:1	27.94
71500	10,000 ct	10,000 ct	2500	.25	.075	1.0	1000	1200	300	1:1	2:1	26.93
71505	*10,000 ct	10,000 ct	—	.25	.075	1.0	1000	1200	—	1:1	—	30.94
71510	15,000 ct	400 ct	100	.16	.075	.82	1500	48	12	6.12:1	12.24:1	26.93
71515	15,000 ct	500 ct	125	.16	.075	.82	1500	60	15	5.48:1	10.95:1	26.93
71520	15,000 ct	600 ct	150	.16	.075	.82	1500	72	18	5:1	10:1	26.93
71525	15,000 ct	10,000 ct	2500	.16	.075	.82	1500	1200	300	1.22:1	2.45:1	26.93
71530	*15,000 ct	15,000 ct	—	.16	.075	.82	1500	1800	—	1:1	—	30.94
71535	15,000 ct	15,000 ct	3750	.16	.075	.82	1500	1800	450	1:1	2:1	27.94
71540	16,000 ct	1,000 ct	250	.15	.075	.8	1600	120	30	4:1	8:1	27.94
71545	20,000 ct	500 ct	125	.125	.075	.7	2000	60	15	6.33:1	12.65:1	25.79
71550	20,000 ct	600 ct	150	.125	.075	.7	2000	72	18	5.77:1	11.55:1	25.79
71555	20,000 ct	800 ct	200	.125	.075	.7	2000	96	24	5:1	10:1	24.65
71560	20,000 ct	1000 ct	250	.125	.075	.7	2000	120	30	4.47:1	8.94:1	30.94
71565	20,000 ct	5000 ct	1250	.125	.075	.7	2000	600	150	2:1	4:1	26.93
71570	20,000 ct	10,000 ct	2500	.125	.075	.7	2000	1200	300	1.41:1	2.83:1	26.93
71575	*20,000 ct	20,000 ct	—	.125	.075	.7	2000	2400	—	1:1	—	30.94
71580	25,000 ct	500 ct	125	.1	.075	.63	2500	60	15	7.07:1	14.14:1	27.94
71585	25,000 ct	1000 ct	250	.1	.075	.63	2500	120	30	5:1	10:1	27.94
71590	30,000 ct	50 ct	12.5	.083	.075	.58	3000	6	1.5	24.5:1	49:1	27.94
71595	30,000 ct	1200 ct	300	.083	.075	.58	3000	144	36	5:1	10:1	27.94
71600	30,000 ct	500 ct	125	.083	.075	.58	3000	60	15	7.75:1	15.5:1	27.95
71605	30,000 ct	200 ct	50	.083	.075	.58	3000	24	6	12.25:1	24.5:1	27.95
71610	30,000 ct	5,000 ct	1250	.083	.075	.58	3000	600	150	2.45:1	4.9:1	27.95
71615	30,000 ct	10,000 ct	2500	.083	.075	.58	3000	1200	300	1.73:1	3.46:1	27.95
71620	*30,000 ct	30,000 ct	—	.083	.075	.58	3000	3600	—	1:1	—	30.41
71625	40,000 ct	400 ct	100	.062	.062	.5	4000	48	12	10:1	20:1	30.41

\*INCLUDES ELECTROSTATIC SHIELD

\*\*\*Discount Prices: 1-9 Net; 10-24 less 10%; 25-49 less 16%; 50-99 less 23%; 100-499 less 30%

Ordering Instructions:  
No minimum. Net 30 days  
F.O.B. Mt. Vernon, New York.

#### INDUCTORS

ALL INDUCTORS HAVE SPLIT WINDINGS AND MEASUREMENTS ARE LISTED FOR BOTH SERIES AND PARALLEL CONNECTIONS. TWO VALUES OF INDUCTANCE, EACH AT A PARTICULAR VALUE OF D.C. CURRENT, ARE LISTED FOR EACH INDUCTOR.

PICO PART NUMBER	INDUCTANCE SERIES	DC CURRENT	DC RESISTANCE	PRICES 1-9***
71705	SERIES { 0.1 08	4	25	21.41
	PARALLEL { .025 .02	10 8 20	6.5	
71710	SERIES { 0.9 0.5	2 6	105	21.41
	PARALLEL { .23 .13	4 12	26	
71715	SERIES { 2.5 0.9	2 4	630	21.41
	PARALLEL { 0.6 0.23	4 8	160	
71720	SERIES { 4.5 1.2	2 4	2300	22.73
	PARALLEL { 1.1 0.3	4 8	575	

For immediate  
engineering  
assistance  
or to place  
an order—

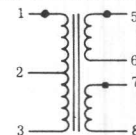
Call Toll Free  
800-431-1064

# SURFACE MOUNT

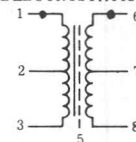
## 71000 SERIES



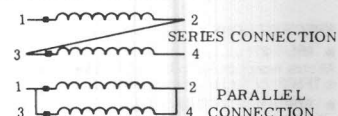
SCHEMATICS FOR TRANSFORMERS WITH SPLIT SECONDARIES



SCHEMATIC FOR TRANSFORMERS WITH ELECTROSTATIC SHIELD



SCHEMATIC FOR INDUCTORS



#### FEATURES

- EXTREME RESISTANCE TO THERMAL SHOCK
- ULTRA MINIATURE SIZE
- PICO IS APPROVED QPL SOURCE (MIL-T-27)
- MAGNETIC SHIELD DESIGN AVAILABLE
- ELECTROSTATIC SHIELDING CAN BE ADDED.
- VARIATION OF STANDARD DESIGNS AVAILABLE
- SPECIAL PRODUCTION TECHNIQUES ENSURE UNIFORM SIZE AND LEADS WHICH ARE FREE OF ENCAPSULANT. NO MENISCUS IN LEAD AREA.
- EVERY UNIT IN THIS CATALOG CAN BE MADE WITH A 300 THERMAL CYCLE GUARANTEE USING PICO'S SPECIAL SR CONSTRUCTION. CONTACT FACTORY FOR DETAILS.

THIS PRODUCT IS PATENTED

Delivery—  
stock to one week

# PICO Electronics, Inc.

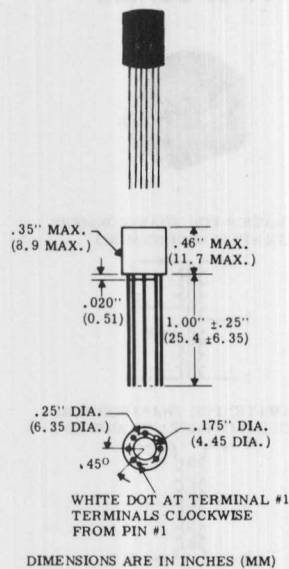
453 N. MacQuesten Pkwy.  
Mt. Vernon, N.Y. 10552  
914-699-5514

FAX 914-699-5565



# PICO's ultra-miniature transformers

## Y SERIES Plug-In



### SPECIFICATIONS

- **MIL-T-27:**.....  
All units manufactured to MIL-T-27, Military Designation is TF5R21ZZ for Transformers, TF5R20ZZ for Inductors.
- **FREQUENCY RESPONSE:**.....  
±3db, 300 Hz-100 KHz at 1.0 Milliwatt.
- **MAXIMUM DISTORTION:**.....  
5% With Rated Power Level at 1 KHz and 400 Hz and 300 Hz.
- **DIELECTRIC STRENGTH:**.....  
All Units Tested at 200 V RMS.
- **INSULATION RESISTANCE:**.....  
Greater Than 10,000 Megohms at 300 V DC.
- **WEIGHT:**.....  
3 Grams
- **OPERATING TEMPERATURE:**.....  
-55°c to +105°c (All Units Can be Supplied to Class S Requirements, +130°c).
- **TERMINALS:**.....  
Solid .016 Diameter Conductor. Conductor is Copper Clad Steel. Tinned 100%. Electroplated Per Mil-T-10727A and ASTM CCS B452.
- **THERMAL SHOCK:**.....  
25 Cycles, Method 107D, MIL-STD-202E, Test Condition A-1.

For immediate engineering assistance  
or to place an order—  
Call Toll Free 800-431-1064

# PICO Electronics, Inc.

453 N. MacQuesten Pkwy.  
Mt. Vernon, N.Y. 10552

914-699-5514 • FAX 914-699-5565

Delivery—  
stock to one week

PICO PART NUMBER	PRIMARY IMPEDANCE OHMS	SECONDARY IMPEDANCE OHMS SPLIT WINDINGS		POWER WATTS			PRIMARY UNBAL DC CURRENT ma	PRIMARY DC RESIST OHMS	SECONDARY DC RESISTANCE OHMS		TURNS RATIO PRIME/SEC		PICO PRICES 1-9 ***
		SER	PAR	1KHz and higher	400 Hz and higher	300 Hz and higher			SER CONN	PAR CONN	SEC SER CONN	SEC PAR CONN	
Y-27003	10 ct	10 ct	2.5	.6	.2	.1	31.6	1	1.25	.32	1:1	2:1	20.42
Y-27005	20 ct	8 ct	2	.6	.2	.1	22.3	2	.9	.23	1.58:1	3.16:1	20.42
Y-27010	20 ct	20 ct	5	.6	.2	.1	22.3	2.1	2.25	.56	1:1	2:1	20.42
Y-27015	32 ct	32 ct	8	.6	.2	.1	17.6	3.4	4	1	1:1	2:1	20.42
Y-27020	40 ct	40 ct	10	.6	.2	.1	15.8	4.2	4.5	1.13	1:1	2:1	20.42
Y-27025	48 ct	16 ct	4	.6	.2	.1	14.4	5	1.8	.45	1.73:1	3.46:1	20.42
Y-27030	50 ct	50 ct	12.5	.6	.2	.1	14.1	5.25	5.6	1.4	1:1	2:1	20.42
Y-27035	80 ct	32 ct	8	.6	.2	.1	11.1	8.4	4	1	1.58:1	3.16:1	26.86
Y-27040	100 ct	40 ct	10	.6	.2	.1	10	10	4.5	1.13	1.58:1	3.16:1	26.86
Y-27045	100 ct	100 ct	25	.6	.2	.1	10	11	11.25	2.8	1:1	2:1	26.86
Y-27050*	120 ct	12.8 ct	3.2	.6	.2	.1	9.1	14.4	1.8	.45	3.06:1	6.12:1	19.46
Y-27055	120 ct	60 ct	15	.6	.2	.1	9.1	14.4	8.4	2.1	1.41:1	2.83:1	25.71
Y-27060	120 ct	120 ct	30	.6	.2	.1	9.1	14.4	16.8	4.2	1:1	2:1	25.71
Y-27065	150 ct	12 ct	3	.6	.2	.1	8.2	15	1.5	.38	3.54:1	7.08:1	19.46
Y-27070	150 ct	50 ct	12.5	.6	.2	.1	8.2	15	6	1.5	1.73:1	3.46:1	21.64
Y-27075	150 ct	100 ct	25	.6	.2	.1	8.2	15	12	3	1.22:1	2.45:1	21.64
Y-27080	150 ct	150 ct	37.5	.6	.2	.1	8.2	15	18	4.5	1:1	2:1	25.33
Y-27085	150 ct	600 ct	150	.6	.2	.1	8.2	15	72	18	1:2	1:1	21.64
Y-27090	200 ct	200 ct	50	.6	.2	.1	7	22	24	6	1:1	2:1	21.64
Y-27095	300 ct	12 ct	3	.6	.2	.1	5.8	30	1.4	.35	5:1	10:1	19.46
Y-27100	300 ct	50 ct	12.5	.6	.2	.1	5.8	30	6	1.5	2.45:1	4.9:1	21.64
Y-27105	300 ct	150 ct	37.5	.6	.2	.1	5.8	30	18	4.5	1.41:1	2.83:1	21.64
Y-27110	300 ct	300 ct	75	.6	.2	.1	5.8	30	36	9	1:1	2:1	25.71
Y-27115	300 ct	600 ct	150	.6	.2	.1	5.8	30	72	18	1:1.41	1.41:1	20.42
Y-27120	320 ct	12.8 ct	3.2	.6	.2	.1	5.6	36	1.8	.45	5:1	10:1	19.46
Y-27125	400 ct	40 ct	10	.6	.2	.1	5	40	4.8	1.2	3.16:1	6.32:1	25.71
Y-27130	400 ct	120 ct	30	.6	.2	.1	5	40	14.5	3.6	1.83:1	3.65:1	25.71
Y-27135	400 ct	200 ct	50	.6	.2	.1	5	40	24	6	1.4:1	2.83:1	21.46
Y-27140	400 ct	400 ct	100	.6	.2	.1	5	40	48	12	1:1	2:1	25.71
Y-27145	400 ct	1000 ct	250	.6	.2	.1	5	40	125	31	1:1.58	1.26:1	29.49
Y-27150	400 ct	2000 ct	500	.6	.2	.1	5	40	240	60	1:2.24	1:1.12	29.49
Y-27155	400 ct	4000 ct	1000	.6	.2	.1	5	40	480	120	1:3.16	1:1.58	26.64
Y-27160	500 ct	12.8 ct	3.2	.6	.2	.1	4.5	50	1.5	.38	6.25:1	12.5:1	22.88
Y-27165	500 ct	16 ct	4	.6	.2	.1	4.5	50	1.9	.48	5.6:1	11.2:1	22.88
Y-27170	500 ct	50 ct	12.5	.6	.2	.1	4.5	50	6	1.5	3.16:1	6.32:1	22.88
Y-27175	500 ct	150 ct	37.5	.6	.2	.1	4.5	50	18	4.5	1.83:1	3.65:1	22.88
Y-27180	500 ct	500 ct	125	.6	.2	.1	4.5	50	60	15	1:1	2:1	22.88
Y-27185	*500 ct	500 ct	—	.6	.2	.1	4.5	50	60	—	1:1	—	22.88
Y-27190	500 ct	600 ct	150	.6	.2	.1	4.5	50	72	18	1:1.1	1.83:1	20.42
Y-27195	600 ct	12.8 ct	3.2	.6	.2	.1	4.1	60	1.5	.38	6.85:1	13.7:1	18.38
Y-27200	600 ct	30 ct	7.5	.6	.2	.1	4.1	60	3.6	.9	4.47:1	8.94:1	20.42
Y-27205	600 ct	48 ct	12	.6	.2	.1	4.1	60	5.8	1.45	3.54:1	7.07:1	20.42
Y-27210	600 ct	200 ct	50	.6	.2	.1	4.1	60	24	6	1.73:1	3.46:1	20.42
Y-27215**	600 ct	600 ct	150	.6	.2	.1	4.1	60	72	18	1:1	2:1	20.42
Y-27220**	*600 ct	600 ct	—	.6	.2	.1	4.1	60	72	—	1:1	—	20.42
Y-27225**	600 ct	1200 ct	300	.6	.2	.1	4.1	60	144	36	1:1.41	1.41:1	20.42
Y-27230	640 ct	12.8 ct	3.2	.6	.2	.1	3.9	64	1.5	.38	7.07:1	14.14:1	20.42
Y-27235	700 ct	100 ct	25	.6	.2	.1	3.8	70	12	3	2.65:1	5.29:1	20.42
Y-27240	800 ct	12.8 ct	3.2	.6	.2	.1	3.5	80	1.5	.38	7.9:1	15.8:1	20.42
Y-27245	800 ct	48 ct	12	.6	.2	.1	3.5	80	5.8	1.45	4.08:1	8.16:1	22.88
Y-27250	800 ct	800 ct	200	.6	.2	.1	3.5	80	96	24	1:1	2:1	22.88
Y-27255	900 ct	600 ct	150	.6	.2	.1	3.3	90	72	18	1.22:1	2.45:1	20.42
Y-27260	1000 ct	12 ct	3	.6	.2	.1	3.2	100	1.4	.35	9.13:1	18.3:1	20.42
Y-27265	1000 ct	50 ct	12.5	.6	.2	.1	3.2	100	6	1.5	4.47:1	8.94:1	22.88
Y-27270	1000 ct	1000 ct	250	.6	.2	.1	3.2	100	120	30	1:1	2:1	22.88
Y-27275	1060 ct	12.8 ct	3.2	.6	.2	.1	3.1	106	1.5	.38	9.1:1	18.2:1	20.42
Y-27280	1200 ct	12.8 ct	3.2	.6	.2	.1	2.9	120	1.5	.38	9.68:1	19.4:1	18.38
Y-27285	1200 ct	500 ct	125	.6	.2	.1	2.9	120	60	15	1.55:1	3.1:1	18.38
Y-27290	1200 ct	1200 ct	300	.6	.2	.1	2.9	120	144	36	1:1	2:1	18.38
Y-27295	*1200 ct	1200 ct	—	.6	.2	.1	2.9	120	144	—	1:1	—	20.42
Y-27300	1500 ct	12 ct	3	.6	.2	.1	2.6	150	1.44	.36	11.2:1	22.4:1	20.42
Y-27305	1500 ct	500 ct	125	.6	.2	.1	2.6	150	60	15	1.73:1	3.46:1	22.88
Y-27310	*1500 ct	600 ct	—	.6	.2	.1	2.6	150	72	—	1.58:1	—	29.49
Y-27315	*1500 ct	1500 ct	—	.6	.2	.1	2.6	150	180	—	1:1	—	22.88
Y-27320	1600 ct	12.8 ct	3.2	.6	.2	.1	2.5	160	1.5	.38	11.2:1	22.4:1	20.42
Y-27325	2000 ct	8 ct	2	.6	.2	.1	2.2	200	.96	.24	15.8:1	31.6:1	22.88
Y-27330	2000 ct	2000 ct	500	.6	.2	.1	2.2	200	240	60	1:1	2:1	26.64
Y-27335	*2000 ct	2000 ct	—	.6	.2	.1	2.2	200	240	—	1:1	—	29.49
Y-27340	2000 ct	8000 ct	2000	.6	.2	.1	2.2	200	960	240	1:2	1:1	26.64
Y-27345	2500 ct	2500 ct	625	.6	.2	.1	2	250	300	75	1:1	2:1	26.64
Y-27350	3000 ct	3000 ct	725	.6	.2	.1	1.8	300	360	90	1:1	2:1	21.41
Y-27355	*3000 ct	3000 ct	—	.6	.2	.1	1.8	300	360	—	1:1	—	29.49
Y-27360	3600 ct	3600 ct	900	.6	.2	.1	1.7	360	432	108	1:1	2:1	26.64
Y-27365	4000 ct	16 ct	4	.6	.2	.1	1.6	400	1.92	.48	15.8:1	31.6:1	26.64
Y-27370**	4000 ct	600 ct	150	.6	.2	.1	1.6	400	72	18	2.58:1	5.16:1	26.64
Y-27375	4000 ct	1000 ct	250	.6	.2	.1	1.6	400	120	30	2:1	4:1	26.64
Y-27380	*4000 ct	8000 ct	—	.6	.2	.1	1.6	400	960	—	1:1.41	—	26.64
Y-27385	5000 ct	500 ct	125	.5	.2	.1	1.4	500	60	15	3.16:1	6.32:1	21.41
Y-27390	5000 ct	5000 ct	1250	.5	.2	.1	1.4	500	600	150	1:1	2:1	21.41
Y-27395	7500 ct	50 ct	12.5	.33	.2	.1	1.2	750	6	1.5	12.2:1	24.5:1	21.41
Y-27400	7500 ct	100 ct	25	.33	.2	.1	1.2	750	12	3	8.66:1	17.3:1	22.66
Y-27405	7500 ct	600 ct	150	.33	.2	.1	1.2	750	72	18	3.54:1	7.07:1	25.15

\*\*\*Discount Prices: 1-9 Net;  
10-24 less 10%; 25-49 less 16%;  
50-99 less 23%; 100-499 less 30%

Ordering Instructions  
No minimum. Net 30 days  
F.O.B. Mt. Vernon, New York

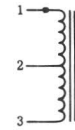
\*INCLUDES ELECTROSTATIC SHIELD  
\*\*MINIATURIZED TELEPHONE COUPLING APPLICATION



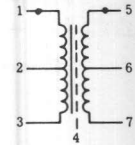
# PICO's ultra-miniature transformers

## Y SERIES Plug-In

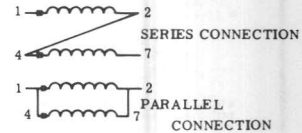
SCHEMATIC FOR TRANSFORMERS  
WITH SPLIT SECONDARIES



SCHEMATIC FOR TRANSFORMERS  
WITH ELECTROSTATIC SHIELD



SCHEMATIC FOR INDUCTORS



### FEATURES

- EXTREME RESISTANCE TO THERMAL SHOCK
- ULTRA MINIATURE SIZE
- PICO IS APPROVED QPL SOURCE (MIL-T-27)
- MAGNETIC SHIELDS AVAILABLE
- ELECTROSTATIC SHIELDING CAN BE ADDED
- VARIATION OF STANDARD DESIGNS AVAILABLE
- PRIMARY AND SECONDARY WINDINGS CAN BE USED EITHER AS INPUT OR OUTPUT.
- SPECIAL PRODUCTION TECHNIQUES ENSURE UNIFORM SIZE AND LEADS WHICH ARE FREE OF ENCAPSULANT. NO MENISCUS IN LEAD AREA.
- EVERY UNIT IN THIS CATALOG CAN BE MADE WITH A 300 THERMAL CYCLE GUARANTEE USING PICO'S SPECIAL SR CONSTRUCTION. CONTACT FACTORY FOR DETAILS.

THIS PRODUCT IS PATENTED

**Delivery—  
stock to one week**

# PICO Electronics, Inc.

453 N. MacQuesten Pkwy.  
Mt. Vernon, N.Y. 10552

914-699-5514 • FAX 914-699-5565

**For immediate  
engineering  
assistance  
or to place  
an order—**

**Call Toll Free  
800-431-1064**

PICO PART NUMBER	PRIMARY IMPEDANCE OHMS	SECONDARY IMPEDANCE OHMS SPLIT WINDINGS SER PAR	POWER WATTS 1KHz and higher 400 Hz and higher 300 Hz and higher	PRIMARY UNBAL DC CURRENT ma	PRIMARY DC RESIST OHMS	SECONDARY DC RESISTANCE OHMS SER CONN PAR CONN	URNS RATIO PRIME/SEC SEC SER CONN SEC PAR CONN	PICO PRICES 1-9 ***
Y-27410	7500 ct	2500 ct	625 .33 .2 .1	1.2	750	300 75	1.73:1 3.46:1	25.15
Y-27415	*7500 ct	7500 ct	.33 .2 .1	1.2	750	900 -	1:1 -	29.49
Y-27420	8000 ct	12.8 ct	3.2 .3 .2 .1	1.1	800	1.5 .38	25:1 50:1	21.41
Y-27425	8000 ct	1000 ct	250 .3 .2 .1	1.1	800	120 30	2.83:1 5.66:1	21.41
Y-27430	*8000 ct	1200 ct	- .3 .2 .1	1.1	800	144 -	2.58:1 -	26.64
Y-27435	*9000 ct	9000 ct	- .27 .2 .1	1.1	900	1080 -	1:1 -	27.69
Y-27440	10,000 ct	12.8 ct	3.2 .25 .2 .1	1.0	1000	1.5 .38	28:1 56:1	20.42
Y-27445	10,000 ct	16 ct	4 .25 .2 .1	1.0	1000	1.92 .48	25:1 50:1	22.57
Y-27450	10,000 ct	100 ct	25 .25 .2 .1	1.0	1000	12 3	10:1 20:1	22.57
Y-27455	10,000 ct	200 ct	50 .25 .2 .1	1.0	1000	24 6	7.07:1 14.14:1	22.57
Y-27460	10,000 ct	500 ct	125 .25 .2 .1	1.0	1000	60 15	4.47:1 8.94:1	22.57
Y-27465	10,000 ct	600 ct	150 .25 .2 .1	1.0	1000	72 18	4.08:1 8.16:1	22.57
Y-27470	10,000 ct	1000 ct	250 .25 .2 .1	1.0	1000	120 30	3.16:1 6.32:1	22.57
Y-27475	10,000 ct	1200 ct	300 .25 .2 .1	1.0	1000	144 36	2.89:1 5.77:1	22.57
Y-27480	10,000 ct	1500 ct	375 .25 .2 .1	1.0	1000	180 45	2.58:1 5.16:1	24.60
Y-27485	10,000 ct	2000 ct	500 .25 .2 .1	1.0	1000	240 60	2.24:1 4.47:1	24.60
Y-27490	10,000 ct	5000 ct	1250 .25 .2 .1	1.0	1000	600 150	1.41:1 2.83:1	26.33
Y-27495	10,000 ct	7500 ct	1875 .25 .2 .1	1.0	1000	900 225	1.15:1 2.3:1	26.33
Y-27500	10,000 ct	10,000 ct	2500 .25 .2 .1	1.0	1000	1200 300	1:1 2:1	25.71
Y-27505	*10,000 ct	10,000 ct	- .25 .2 .1	1.0	1000	1200 -	1:1 -	28.67
Y-27510	15,000 ct	400 ct	100 .16 .16 .1	.82	1500	48 12	6.12:1 12.24:1	25.71
Y-27515	15,000 ct	500 ct	125 .16 .16 .1	.82	1500	60 15	5.48:1 10.95:1	25.71
Y-27520	15,000 ct	600 ct	150 .16 .16 .1	.82	1500	72 18	5:1 10:1	25.71
Y-27525	15,000 ct	10,000 ct	2500 .16 .16 .1	.82	1500	1200 300	1.22:1 2.45:1	28.67
Y-27530	*15,000 ct	15,000 ct	- .16 .16 .1	.82	1500	1800 -	1:1 -	28.67
Y-27535	15,000 ct	15,000 ct	3750 .16 .16 .1	.82	1500	1800 450	1:1 2:1	28.67
Y-27540	16,000 ct	1000 ct	250 .15 .15 .1	.8	1600	120 30	4:1 8:1	26.64
Y-27545	20,000 ct	500 ct	125 .125 .125 .1	.7	2000	60 15	6.33:1 12.65:1	25.71
Y-27550	20,000 ct	600 ct	150 .125 .125 .1	.7	2000	72 18	5.77:1 11.55:1	25.71
Y-27555	20,000 ct	800 ct	200 .125 .125 .1	.7	2000	96 24	5:1 10:1	20.42
Y-27560	20,000 ct	1000 ct	250 .125 .125 .1	.7	2000	120 30	4.47:1 8.94:1	25.71
Y-27565	20,000 ct	5000 ct	1250 .125 .125 .1	.7	2000	600 150	2:1 4:1	25.71
Y-27570	20,000 ct	10,000 ct	2500 .125 .125 .1	.7	2000	1200 300	1.41:1 2.83:1	25.71
Y-27575	*20,000 ct	20,000 ct	- .125 .125 .1	.7	2000	2400 -	1:1 -	25.71
Y-27580	25,000 ct	500 ct	125 .1 .1 .1	.63	2500	60 15	7.07:1 14.14:1	25.71
Y-27585	25,000 ct	1000 ct	250 .1 .1 .1	.63	2500	120 30	5:1 10:1	25.71
Y-27590	30,000 ct	50 ct	12.5 .08 .08 .08	.58	3000	6 1.5	24.5:1 49:1	25.71
Y-27595	30,000 ct	1200 ct	300 .08 .08 .08	.58	3000	144 36	5:1 10:1	25.71
Y-27600	30,000 ct	500 ct	125 .08 .08 .08	.58	3000	60 15	7.75:1 15.5:1	25.71
Y-27605	30,000 ct	200 ct	50 .08 .08 .08	.58	3000	24 6	12.25:1 24.5:1	25.71
Y-27610	30,000 ct	5000 ct	1250 .08 .08 .08	.58	3000	600 150	2.45:1 4.9:1	28.65
Y-27615	30,000 ct	10,000 ct	2500 .08 .08 .08	.58	3000	1200 300	1.73:1 3.46:1	28.65
Y-27620	*30,000 ct	30,000 ct	- .08 .08 .08	.58	3000	3600 -	1:1 -	28.65
Y-27625	40,000 ct	400 ct	100 .06 .06 .06	.5	4000	48 12	10:1 20:1	28.65
Y-27630	40,000 ct	2,000 ct	500 .06 .06 .06	.5	4000	240 60	4.47:1 8.94:1	28.65
Y-27635	40,000 ct	4,000 ct	1000 .06 .06 .06	.5	4000	480 120	3.16:1 6.32:1	29.72
Y-27640	40,000 ct	20,000 ct	5000 .06 .06 .06	.5	4000	2400 600	1.41:1 2.83:1	28.65
Y-27645	*40,000 ct	40,000 ct	- .06 .06 .06	.5	4000	4800 -	1:1 -	28.65
Y-27650	50,000 ct	200 ct	50 .05 .05 .05	.45	5000	24 6	15.8:1 31.6:1	29.72
Y-27655	50,000 ct	500 ct	125 .05 .05 .05	.45	5000	60 15	10:1 20:1	29.72
Y-27660	50,000 ct	600 ct	150 .05 .05 .05	.45	5000	72 18	9.13:1 18.26:1	29.72
Y-27665	60,000 ct	15,000 ct	3750 .04 .04 .04	.41	6000	1800 450	2:1 4:1	29.72
Y-27670	62,500 ct	50 ct	12.5 .04 .04 .04	.4	6250	6 1.5	35.4:1 70.7:1	29.72
Y-27675	80,000 ct	15,000 ct	3750 .03 .03 .03	.35	8000	1800 450	2.3:1 4.6:1	29.72
Y-27680	90,000 ct	10,000 ct	2500 .028 .028 .028	.33	9000	1200 300	3:1 6:1	29.72
Y-27685	95,000 ct	15,000 ct	3750 .026 .026 .026	.32	9500	1800 450	2.52:1 5.03:1	29.72
Y-27690	100,000 ct	60 ct	15 .025 .025 .025	.31	10,000	7.2 1.8	40.8:1 81.6:1	32.90
Y-27695	100,000 ct	100 ct	25 .025 .025 .025	.31	10,000	12 3	31.6:1 63.2:1	32.90
Y-27700	100,000 ct	500 ct	125 .025 .025 .025	.31	10,000	60 15	14.1:1 28.3:1	32.90
Y-27705	100,000 ct	10,000 ct	2500 .025 .025 .025	.31	10,000	1200 300	3.16:1 6.32:1	32.90
Y-SHIELD MU-METAL SHIELD .37" DIA. X .46" HT. (9.4MM DIA. X 11.7MM HT.) SINGLE SHIELD								3.51
YXX-SHIELD MU-METAL SHIELD .395" DIA. X .47" HT. (10.1MM DIA. X 11.9MM HT.) USE WITH Y-SHIELD FOR DOUBLE SHIELDING								3.51

\*\*\*Discount Prices: 1-9 Net: 10-24 less 10%; 25-49 less 16%; 50-99 less 23%; 100-499 less 30%  
Ordering Instructions: No minimum. Net 30 days F.O.B. Mt. Vernon, New York

\*INCLUDES  
ELECTROSTATIC SHIELD

### INDUCTORS

ALL INDUCTORS HAVE SPLIT WINDINGS AND MEASUREMENTS ARE LISTED FOR BOTH SERIES AND PARALLEL CONNECTIONS.

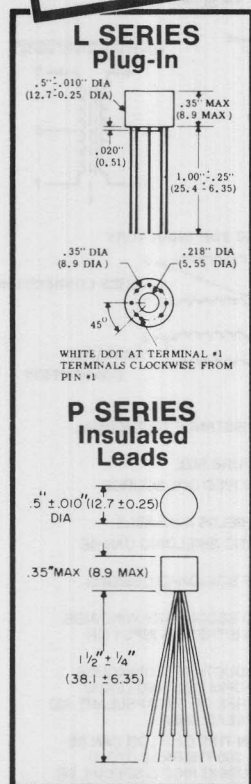
TWO VALUES OF INDUCTANCE, EACH AT A PARTICULAR VALUE OF DC CURRENT, ARE LISTED FOR EACH INDUCTOR.

Y-Series Plug-In	INDUCTANCE SERIES	DC CURRENT ma	DC RESISTANCE OHMS	PRICES 1-9 **
Y-27750	SERIES { .075 .06 PARALLEL { .018 .015	10 30 20 60	10.5 2.6	19.48
Y-27760	SERIES { .3 .15 PARALLEL { .075 .04	4 20 8 40	25 6.2	21.65
Y-27770	SERIES { 3.5 1.0 PARALLEL { 0.9 0.25	2 5 4 10	560 140	21.65
Y-27780	SERIES { 6.0 1.5 PARALLEL { 1.5 0.38	2 5 4 10	2100 525	21.65
Y-27790	SERIES { 20 8 PARALLEL { 5 2	1 3 2 6	5100 1275	26.64

# PICO's ultra-miniature transformers

These units can be manufactured and tested to MIL-T-27/357.  
Contact factory for price and delivery information  
and appropriate part numbers  
(MIL-T-27/357-01 thru MIL-T-27/357-114).

For Surface Mount Versions of  
this series, see pages 16 and 17



Dimensions are in inches (MM)

## SPECIFICATIONS

- **MIL-T-27:**.....  
All units manufactured to MIL-T-27, Military Designation is TF5R21ZZ for Transformers, TF5R20ZZ for Inductors.
- **FREQUENCY RESPONSE:**.....  
±3db, 300 Hz-75 KHz at 1.0 Milliwatt.
- **MAXIMUM DISTORTION:**.....  
5% With Rated Power Level at 1 KHz and 400 Hz.
- **DIELECTRIC STRENGTH:**.....  
All Units Tested at 200 V RMS.
- **INSULATION RESISTANCE:**.....  
Greater Than 10,000 Megohms at 300 V DC.
- **WEIGHT:**.....  
5 Grams
- **OPERATING TEMPERATURE:**.....  
-55°c to +105°c (All Units Can be Supplied to Class S Requirements, +130°c).
- **TERMINALS:**.....  
Solid .016 Diameter Conductor.  
Conductor is Copper Clad Steel.  
Tinned 100%. Electroplated Per Mil-T-10727A and ASTM CCS B452.
- **THERMAL SHOCK:**.....  
25 Cycles, Method 107D, MIL-STD-202E, Test Condition A-1.

# PICO Electronics, Inc.

453 N. MacQuesten Pkwy.,  
Mt. Vernon, N.Y. 10552

914-699-5514

FAX 914-699-5565

PICO PART NUMBER	L-Series Plug-in	P-Series Insulated Leads	PRIMARY IMPEDANCE OHMS	SECONDARY IMPEDANCE OHMS SPLIT		POWER WATTS			PRIMARY UNBALANCED DC CURRENT ma	PRIMARY DC RESISTANCE OHMS	SECONDARY DC RESISTANCE OHMS		TURNS RATIO PRIM/SEC		PICO PRICES 1-9***	
				SER	PAR	1KHz and higher	400 Hz and higher	300 Hz and higher			SER CONN	PAR CONN	SEC SER CONN	SEC PAR CONN	L-Series	P-Series
L-8203	P-9203	20 ct	8 ct	2	.6	.4	.3		30.0	2	1.2	.3	1.58:1	3.16:1	24.26	23.21
L-8205	P-9205	20 ct	20 ct	5	.6	.4	.3		30.0	2	2.8	.7	1:1	2:1	24.26	23.21
L-8210	P-9210	32 ct	32 ct	8	.6	.4	.3		23.0	3.3	4.5	1.13	1:1	2:1	24.26	23.21
L-8215	P-9215	40 ct	40ct	10	.6	.4	.3		21.0	3.7	5	1.25	1:1	2:1	24.26	23.21
L-8218	P-9218	48 ct	16 ct	4	.6	.4	.3		19.0	3.75	3	.75	1.73:1	3.46:1	24.26	23.21
L-8220	P-9220	50 ct	50 ct	12.5	.6	.4	.3		19.0	5	7	1.75	1:1	2:1	24.26	23.21
L-8225	P-9225	80 ct	32 ct	8	.6	.4	.3		15.0	7.5	4.3	1.13	1.58:1	3.16:1	24.26	23.21
L-8228	P-9228	100 ct	40 ct	10	.6	.4	.3		13.0	10.8	5	1.25	1.58:1	3.16:1	24.26	23.21
L-8230	P-9230	100 ct	100 ct	25	.6	.4	.3		13.0	10.8	12	3	1:1	2:1	24.26	23.21
L-8235	P-9235	120 ct	12.8 ct	3.2	.6	.4	.3		12.0	9.3	2.2	.55	3.06:1	6.12:1	24.26	23.21
L-8240	P-9240	120 ct	60 ct	15	.6	.4	.3		12.0	9	7.2	1.8	1.41:1	2.83:1	24.26	23.21
L-8245	P-9245	120 ct	120 ct	30	.6	.4	.3		12.0	11.6	13	3.3	1:1	2:1	24.26	23.21
L-8250	P-9250	150 ct	12 ct	3	.6	.4	.3		11.0	11.2	2.2	.55	3.54:1	7.08:1	24.26	23.21
L-8255	P-9255	150 ct	50 ct	12.5	.6	.4	.3		11.0	13	6.8	1.7	1.73:1	3.46:1	24.26	23.21
L-8260	P-9260	150 ct	100 ct	25	.6	.4	.3		11.0	13	11.8	3	1.22:1	2.45:1	24.26	23.21
L-8265	P-9265	150 ct	150 ct	37.5	.6	.4	.3		11.0	12	18.3	4.6	1:1	2:1	24.26	23.21
L-8270	P-9270	150 ct	600 ct	150	.6	.4	.3		11.0	13	75	19	1:2	1:1	24.26	23.21
L-8275	P-9275	200 ct	200 ct	50	.6	.4	.3		10.0	19	21.3	5.4	1:1	2:1	24.26	23.21
L-8280	P-9280	300 ct	12 ct	3	.6	.4	.3		8.0	24	1.7	.43	5:1	10:1	24.26	23.21
L-8285	P-9285	300 ct	50 ct	12.5	.6	.4	.3		8.0	30	6.8	1.7	2.45:1	4.9:1	24.26	23.21
L-8290	P-9290	300 ct	150 ct	37.5	.6	.4	.3		8.0	30	18	4.6	1.41:1	2.83:1	24.26	23.21
L-8295	P-9295	300 ct	300 ct	75	.6	.4	.3		8.0	30	34	8.5	1:1	2:1	24.26	23.21
L-8300	P-9300	300 ct	600 ct	150	.6	.4	.3		8.0	30	60	15	1:1.41	1.41:1	24.26	23.21
L-8305	P-9305	320 ct	12.8 ct	3.2	.6	.4	.3		7.5	31	1.7	.43	5:1	10:1	24.26	23.21
L-8310	P-9310	400 ct	40 ct	10	.6	.4	.3		7.0	41	4.5	1.13	3.16:1	6.32:1	24.26	23.21
L-8315	P-9315	400 ct	120 ct	30	.6	.4	.3		7.0	41	12	3	1.83:1	3.65:1	24.26	23.21
L-8320	P-9320	400 ct	200 ct	50	.6	.4	.3		7.0	41	21.3	5.4	1.41:1	2.83:1	24.26	23.21
L-8325	P-9325	400 ct	400 ct	100	.6	.4	.3		7.0	41	37.5	9.4	1:1	2:1	24.26	23.21
L-8330	P-9330	400 ct	1000 ct	250	.6	.4	.3		7.0	41	96	24	1:1.58	1.26:1	24.26	23.21
L-8335	P-9335	400 ct	2000 ct	500	.6	.4	.3		7.0	41	212	53	1.22:1	1.12:1	24.26	23.21
L-8340	P-9340	400 ct	4000 ct	1000	.6	.4	.3		7.0	41	375	94	1:3.16	1:1.58	24.26	23.21
L-8342	P-9342	500 ct	12.8 ct	3.2	.6	.4	.3		6.0	48	1.7	.43	6.25:1	12.5:1	24.26	23.21
L-8344	P-9344	500 ct	16 ct	4	.6	.4	.3		6.0	48	1.9	.5	5.6:1	11.2:1	24.26	23.21
L-8345	P-9345	500 ct	50 ct	12.5	.6	.4	.3		6.0	39	6.8	1.7	3.16:1	6.32:1	24.26	23.21
L-8347	P-9347	500 ct	150 ct	37.5	.6	.4	.3		6.0	48	18	4.6	1.83:1	3.65:1	24.26	23.21
L-8350	P-9350	500 ct	500 ct	125	.6	.4	.3		6.0	48	54	13.5	1:1	2:1	24.26	23.21
L-8355	P-9355	*500 ct	500 ct	-	.6	.4	.3		6.0	48	68	-	1:1	-	25.26	24.26
L-8360	P-9360	500 ct	600 ct	150	.6	.4	.3		6.0	48	59	15	1:1.1	1.83:1	24.26	24.26
L-8365	P-9365	600 ct	12.8 ct	3.2	.6	.4	.3		5.5	53	1.7	.43	6.85:1	13.7:1	24.26	24.26
L-8367	P-9367	600 ct	30 ct	7.5	.6	.4	.3		5.5	53	4.2	1.1	4.47:1	8.94:1	24.26	24.26
L-8370	P-9370	600 ct	48 ct	12	.6	.4	.3		5.5	53	6.8	1.7	3.54:1	7.07:1	24.26	24.26
L-8375	P-9375	600 ct	200 ct	50	.6	.4	.3		5.5	53	21.3	5.3	1.73:1	3.46:1	24.26	23.44
L-8380**	P-9380	600 ct	600 ct	150	.6	.4	.3		5.5	57	79	20	1:1	2:1	24.26	23.44
L-8385**	P-9385	*600 ct	600 ct	-	.6	.4	.3		5.5	53	75	-	1:1	-	25.26	24.26
L-8387**	P-9387	600 ct	1200 ct	300	.6	.4	.3		5.5	53	105	26	1:1.41	1.41:1	24.26	23.44
L-8390	P-9390	640 ct	12.8 ct	3.2	.6	.4	.3		5.5	66	1.7	.43	7.07:1	14.14:1	24.26	23.44
L-8395	P-9395	700 ct	100 ct	25	.6	.4	.3		5.0	69	12	3	2.65:1	5.29:1	24.26	23.44
L-8400	P-9400	800 ct	12.8 ct	3.2	.6	.4	.3		5.0	75	1.7	.43	7.9:1	15.8:1	24.26	23.44
L-8405	P-9405	800 ct	48 ct	12	.6	.4	.3		5.0	75	6.8	1.7	4.08:1	8.16:1	24.26	23.44
L-8410	P-9410	800 ct	800 ct	200	.6	.4	.3		5.0	75	105	26	1:1	2:1	24.26	23.44
L-8415	P-9415	900 ct	600 ct	150	.6	.4	.3		4.5	79	75	19	1.22:1	2.45:1	24.26	23.44
L-8420	P-9420	1000 ct	12 ct	3	.6	.4	.3		4.5	103	1.6	.4	9.13:1	18.3:1	24.26	23.44
L-8425	P-9425	1000 ct	50 ct	12.5	.6	.4	.3		4.5	103	6.4	1.6	4.47:1	8.94:1	24.26	23.44
L-8430	P-9430	1000 ct	1000 ct	250	.6	.4	.3		4.5	103	115	28	1:1	2:1	24.26	23.44
L-8435	P-9435	1060 ct	12.8 ct	3.2	.6	.4	.3		4.0	108	1.7	.43	9.1:1	18.2:1	24.26	23.44
L-8440	P-9440	1200 ct	12.8 ct	3.2	.6	.4	.3		4.0	113	1.7	.43	9.88:1	19.4:1	24.26	23.44
L-8445	P-9445	1200 ct	500 ct	125	.6	.4	.3		4.0	113	54	13.5	1.55:1	3.1:1	24.26	23.44
L-8450	P-9450	1200 ct	1200 ct	300	.6	.4	.3		4.0	113	126	31.6	1:1	2:1	24.26	23.44
L-8455	P-9455	*1200 ct	1200 ct	-	.6	.4	.3		4.0	111	125	-	1:1	-	25.26	24.26
L-8460	P-9460	1500 ct	12 ct	3	.6	.4	.3		3.5	126	1.6	.4	11.2:1	22.4:1	24.26	23.44
L-8465	P-9465	1500 ct	500 ct	125	.6	.4	.3		3.5	126	68	17	1.73:1	3.46:1	24.26	23.44
L-8470	P-9470	*1500 ct	600 ct	-	.6	.4	.3		3.5	126	94	-	1.58:1	-	25.26	24.26
L-8475	P-9475	*1500 ct	1500 ct	-	.6	.4	.3		3.5	126	176	-	1:1	-	25.26	24.26
L-8480	P-9480	1600 ct	12.8 ct	3.2	.6	.4	.3		3.5	130	1.7	.43	11.2:1	22.4:1	24.26	23.44
L-8483	P-9483	2000 ct	8 ct	2	.6	.4	.3		3.0	210	1.2	.3	15.8:1	31.6:1	24.26	23.44
L-8485	P-9485	2000 ct	2000 ct	500	.6	.4	.3		3.0	198	218	55	1:1	2:1	24.26	23.44
L-8490	P-9490	*2000 ct	2000 ct	-	.6	.4	.3		3.0	198	218	-	1:1	-	24.26	23.44
L-8495	P-9495	2000 ct	8000 ct	2000	.6	.4	.3		3.0	198	850	213	1:2	1:1	24.26	23.44
L-8497	P-9497	2500 ct	2500 ct	625	.6	.4	.3		2.5	220	305	76	1:1	2:1	24.26	23.44
L-8500	P-9500	3000 ct	3000 ct	750	.6	.4	.3		2.5	243	335	84	1:1	2:1	24.26	23.44

\*\*\*Discount Prices: 1-9 Net; 10-24 less 10%; 25-29 less 16%; 50-99 less 23%; 100-499 less 30%  
Ordering Instructions: No minimum. Net 30 days F.O.B. Mt. Vernon, New York.

\*INCLUDES ELECTROSTATIC SHIELD  
\*\*MINIATURIZED TELEPHONE COUPLING APPLICATION

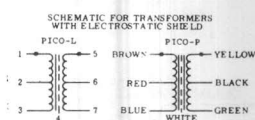
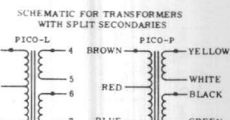
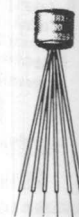


PICO PART NUMBER		PRIMARY IMPEDANCE OHMS	SECONDARY IMPEDANCE OHMS SPLIT WINDINGS		POWER WATTS			PRIMARY UNBALANCED DC CURRENT ma	PRIMARY DC RESISTANCE OHMS	SECONDARY DC RESISTANCE OHMS		TURNS RATIO PRIM/SEC		PICO PRICES 1-9***	
L-Series Plug-In	P-Series Insulated Leads		SER	PAR	1KHz and higher	400 Hz and higher	300 Hz and higher			SER CONN	PAR CONN	SEC SER CONN	SEC PAR CONN	L-Series	P-Series
L-8505	P-9505	*3000 ct	3000 ct	-	.6	.4	.3	2.5	304	335	-	1:1	-	25.26	24.26
L-8510	P-9510	3600 ct	3600 ct	900	.6	.4	.3	2.5	330	366	92	1:1	2:1	24.26	23.44
L-8512	P-9512	4000 ct	16 ct	4	.6	.4	.3	2.0	350	3	.75	15.8:1	31.6:1	24.26	23.44
L-8514	P-9514	4000 ct	600 ct	150	.6	.4	.3	2.0	350	76	19	2.58:1	5.16:1	24.26	23.44
L-8515	P-9515	4000 ct	1000 ct	250	.6	.4	.3	2.0	350	115	29	2:1	4:1	24.26	23.44
L-8520	P-9520	*4000 ct	8000 ct	-	.6	.4	.3	2.0	350	1062	-	1:1.41	-	25.26	24.26
L-8525	P-9525	5000 ct	500 ct	125	.6	.4	.3	2.0	350	67	17	3.16:1	6.32:1	24.26	23.44
L-8530	P-9530	5000 ct	5000 ct	1250	.6	.4	.3	2.0	390	538	135	1:1	2:1	24.26	23.44
L-8535	P-9535	7500 ct	50 ct	12.5	.6	.4	.3	1.5	600	7	1.75	12.2:1	24.5:1	26.92	26.12
L-8540	P-9540	7500 ct	100 ct	25	.6	.4	.3	1.5	600	12	3	8.66:1	17.3:1	26.92	26.12
L-8545	P-9545	7500 ct	600 ct	150	.6	.4	.3	1.5	600	78	19.5	3.54:1	7.07:1	26.92	26.12
L-8550	P-9550	7500 ct	2500 ct	625	.6	.4	.3	1.5	600	305	77	1.73:1	3.46:1	26.92	26.14
L-8555	P-9555	*7500 ct	7500 ct	-	.6	.4	.3	1.5	750	828	-	1:1	-	28.82	26.91
L-8560	P-9560	8000 ct	12.8 ct	3.2	.6	.4	.3	1.5	750	1.7	.43	25:1	50:1	26.92	26.14
L-8565	P-9565	8000 ct	1000 ct	250	.6	.4	.3	1.5	750	115	29	2.83:1	5.66:1	26.92	26.14
L-8570	P-9570	*8000 ct	1200 ct	-	.6	.4	.3	1.5	750	158	-	2.58:1	-	28.82	26.91
L-8575	P-9575	*9000 ct	9000 ct	-	.6	.4	.3	1.4	796	1100	-	1:1	-	28.82	26.91
L-8580	P-9580	10,000 ct	12.8 ct	3.2	.6	.4	.3	1.4	1048	1.7	.43	28:1	56:1	26.92	26.14
L-8585	P-9585	10,000 ct	16 ct	4	.6	.4	.3	1.4	1048	3	.75	25:1	50:1	26.92	26.14
L-8590	P-9590	10,000 ct	100 ct	25	.6	.4	.3	1.4	839	12	3	10:1	20:1	26.92	26.14
L-8595	P-9595	10,000 ct	200 ct	50	.6	.4	.3	1.4	839	27	6.7	7.07:1	14.14:1	26.92	26.14
L-8600	P-9600	10,000 ct	500 ct	125	.6	.4	.3	1.4	850	67	17	4.47:1	8.94:1	26.92	26.14
L-8605	P-9605	10,000 ct	600 ct	150	.6	.4	.3	1.4	850	74	18.5	4.08:1	8.16:1	26.92	26.14
L-8610	P-9610	10,000 ct	1000 ct	250	.6	.4	.3	1.4	850	115	29	3.16:1	6.32:1	26.92	26.14
L-8615	P-9615	10,000 ct	1200 ct	300	.6	.4	.3	1.4	850	158	39.5	2.89:1	5.77:1	26.92	26.14
L-8620	P-9620	10,000 ct	1500 ct	375	.6	.4	.3	1.4	850	177	44	2.58:1	5.16:1	26.92	26.14
L-8625	P-9625	10,000 ct	2000 ct	500	.6	.4	.3	1.4	850	255	64	2.24:1	4.47:1	26.92	26.14
L-8630	P-9630	10,000 ct	5000 ct	1250	.6	.4	.3	1.4	850	630	158	1.41:1	2.83:1	26.92	26.14
L-8635	P-9635	10,000 ct	7500 ct	1875	.6	.4	.3	1.4	850	772	193	1.15:1	2.3:1	26.92	26.14
L-8640	P-9640	10,000 ct	10,000 ct	2500	.6	.4	.3	1.4	866	1215	304	1:1	2:1	26.92	26.14
L-8645	P-9645	*10,000 ct	10,000 ct	-	.6	.4	.3	1.4	1060	1215	-	1:1	-	28.82	26.91
L-8650	P-9650	15,000 ct	400 ct	100	.6	.4	.3	1.0	1305	47	12	6.12:1	12.24:1	26.92	26.14
L-8652	P-9652	15,000 ct	500 ct	125	.6	.4	.3	1.0	1305	53	13	5.48:1	10.95:1	26.92	26.14
L-8655	P-9655	15,000 ct	600 ct	150	.6	.4	.3	1.0	1305	72.5	18	5:1	10:1	26.92	26.14
L-8660	P-9660	15,000 ct	10,000 ct	2500	.6	.4	.3	1.0	1305	1215	304	1.22:1	2.45:1	26.92	26.14
L-8665	P-9665	*15,000 ct	15,000 ct	-	.6	.4	.3	1.0	1305	1800	-	1:1	-	28.82	26.91
L-8670	P-9670	15,000 ct	15,000 ct	3750	.6	.4	.3	1.0	1305	1800	450	1:1	2:1	26.92	26.14
L-8675	P-9675	16,000 ct	1000 ct	250	.6	.4	.3	1.0	1343	115	29	4:1	8:1	26.92	26.14
L-8680	P-9680	20,000 ct	500 ct	125	.5	.4	.3	1.0	1560	68	17	6.33:1	12.65:1	28.82	26.91
L-8685	P-9685	20,000 ct	600 ct	150	.5	.4	.3	1.0	1560	75	19	5.77:1	11.55:1	28.82	26.91
L-8690	P-9690	20,000 ct	800 ct	200	.5	.4	.3	1.0	1560	108	27	5:1	10:1	28.82	26.91
L-8695	P-9695	20,000 ct	1000 ct	250	.5	.4	.3	1.0	1560	121	30.5	4.47:1	8.94:1	28.82	26.91
L-8700	P-9700	20,000 ct	5000 ct	1250	.5	.4	.3	1.0	1560	672	168	2:1	4:1	28.82	26.91
L-8705	P-9705	20,000 ct	10,000 ct	2500	.5	.4	.3	1.0	1560	1520	380	1.41:1	2.83:1	28.82	26.91
L-8710	P-9710	*20,000 ct	20,000 ct	-	.5	.4	.3	1.0	1560	2727	682	1:1	-	29.98	28.82
L-8715	P-9715	25,000 ct	500 ct	125	.4	.4	.3	0.8	2170	68	17	7.07:1	14.14:1	28.82	26.91
L-8720	P-9720	25,000 ct	1000 ct	250	.4	.4	.3	0.8	2170	120	30	5:1	10:1	28.82	26.91
L-8725	P-9725	30,000 ct	50 ct	12.5	.33	.33	.3	0.8	2400	7	1.75	24.5:1	49:1	29.98	28.82
L-8730	P-9730	30,000 ct	1200 ct	300	.33	.33	.3	0.8	2400	156	39	5:1	10:1	29.98	28.82
L-8732	P-9732	30,000 ct	500 ct	125	.33	.33	.3	0.8	2400	68	17	7.75:1	15.5:1	29.98	28.82
L-8734	P-9734	30,000 ct	200 ct	50	.33	.33	.3	0.8	2400	29	7.2	12.25:1	24.5:1	29.98	28.82
L-8735	P-9735	30,000 ct	5000 ct	1250	.33	.33	.3	0.8	2400	673	169	2.45:1	4.9:1	29.98	28.82
L-8740	P-9740	30,000 ct	10,000 ct	2500	.33	.33	.3	0.8	2400	1520	380	1.73:1	3.46:1	29.98	28.82
L-8745	P-9745	*30,000 ct	30,000 ct	-	.33	.33	.3	0.8	3000	3310	-	1:1	-	32.19	30.27
L-8750	P-9750	40,000 ct	400 ct	100	.25	.25	.25	0.7	3400	57	14.3	10:1	20:1	32.19	30.27
L-8755	P-9755	40,000 ct	2000 ct	500	.25	.25	.25	0.7	3400	268	67	4.47:1	8.94:1	32.19	30.27
L-8760	P-9760	40,000 ct	4000 ct	1000	.25	.25	.25	0.7	3400	476	119	3.16:1	6.32:1	32.19	30.27
L-8765	P-9765	40,000 ct	20,000 ct	5000	.25	.25	.25	0.7	3400	2700	675	1.41:1	2.83:1	32.19	30.27
L-8770	P-9770	*40,000 ct	40,000 ct	-	.25	.25	.25	0.7	3400	4750	-	1:1	-	35.90	34.32
L-8775	P-9775	50,000 ct	200 ct	50	.2	.2	.2	0.6	4850	27	6.7	15.8:1	31.6:1	35.90	34.32
L-8777	P-9777	50,000 ct	500 ct	125	.2	.2	.2	0.6	4850	68	17	10:1	20:1	35.90	34.32
L-8779	P-9779	50,000 ct	600 ct	150	.2	.2	.2	0.6	4850	75	18.5	9.13:1	18.26:1	35.90	34.32
L-8780	P-9780	60,000 ct	15,000 ct	3750	.16	.16	.16	0.5	5275	2250	563	2:1	4:1	38.71	37.76
L-8785	P-9785	62,500 ct	50 ct	12.5	.16	.16	.16	0.5	5445	8.7	2.2	35.4:1	70.7:1	38.71	37.76
L-8787	P-9787	80,000 ct	15,000 ct	3750	.12	.12	.12	0.4	6130	2250	563	2.3:1	4.6:1	38.71	37.76
L-8790	P-9790	90,000 ct	10,000 ct	2500	.1	.1	.1	0.4	8140	1520	380	3:1	6:1	40.67	39.18
L-8795	P-9795	95,000 ct	15,000 ct	3750	.1	.1	.1	0.4	8400	2250	563	2.52:1	5.03:1	40.67	39.18
L-8800	P-9800	100,000 ct	60 ct	15	.1	.1	.1	0.4	8750	9.2	2.3	40.8:1	81.6:1	40.67	39.18
L-8805	P-9805	100,000 ct	100 ct	25	.1	.1	.1	0.4	8750	15	3.8	31.6:1	63.2:1	40.67	39.18
L-8810	P-9810	100,000 ct	500 ct	125	.1	.1	.1	0.4	8750	68	17	14.1:1	28.3:1	40.67	39.18
L-8815	P-9815	100,000 ct	10,000 ct	2500	.1	.1	.1	0.4	8750	1535	385	3.16:1	6.32:1	40.67	39.18
L-SHIELD	MU-METAL SHIELD .53" d X .41" h (13.46 mm d X 10.41 mm h)														3.50
P-SHIELD	MU-METAL SHIELD .53" d X .41" h (13.46 mm d X 10.41 mm h)														3.50

\*INCLUDES ELECTROSTATIC SHIELD

\*\*\*Discount Prices: 1-9 Net; 10-24 less 10%; 25-49 less 16%; 50-99 less 23%; 100-499 less 30%  
Ordering Instructions: No minimum. Net 30 days F.O.B. Mt. Vernon, New York

## L SERIES P SERIES Plug-In Insulated Leads



### FEATURES

- EXTREME RESISTANCE TO THERMAL SHOCK
- ULTRA MINIATURE SIZE
- PICO IS APPROVED QPL SOURCE (MIL-T-27)
- MAGNETIC SHIELDS AVAILABLE
- ELECTROSTATIC SHIELDING CAN BE ADDED.
- VARIATION OF STANDARD DESIGNS AVAILABLE
- PRIMARY AND SECONDARY WINDINGS CAN BE USED EITHER AS INPUT OR OUTPUT.
- SPECIAL PRODUCTION TECHNIQUES ENSURE UNIFORM SIZE AND LEADS WHICH ARE FREE OF ENCAPSULANT. NO MENISCUS IN LEAD AREA.
- EVERY UNIT IN THIS CATALOG CAN BE MADE WITH A 300 THERMAL CYCLE GUARANTEE USING PICO'S SPECIAL SR CONSTRUCTION. CONTACT FACTORY FOR DETAILS.

**PICO**  
Electronics,  
Inc.

453 N. MacQuesten Pkwy.  
Mt. Vernon, N.Y. 10552

914-699-5514

FAX 914-699-5565

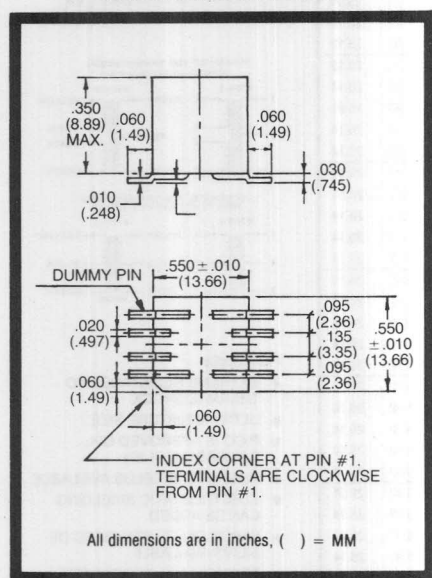
Delivery—  
stock to one week

For immediate  
engineering  
assistance  
or to place  
an order—

Call Toll Free  
800-431-1064

**SURFACE MOUNT**  
**PICO** surface mount units utilize materials and methods to withstand extreme temperature (220°C) of vapor phase, I.R., and other reflow procedures without degradation of electrical or mechanical characteristics.

**PICO's**  
**ultra-miniature**  
**transformers**



**SPECIFICATIONS**

- **MIL-T-27:**.....  
 All units manufactured to MIL-T-27, Military Designation is TF5R21ZZ for Transformers, TF5R20ZZ for Inductors.
- **FREQUENCY RESPONSE:**.....  
 ±3db, 300 Hz-75 KHz at 1.0 Milliwatt.
- **MAXIMUM DISTORTION:**.....  
 5% With Rated Power Level at 1 KHz and 400 Hz.
- **DIELECTRIC STRENGTH:**.....  
 All Units Tested at 200 V RMS.
- **INSULATION RESISTANCE:**.....  
 Greater Than 10,000 Megohms at 300 V DC.
- **WEIGHT:**.....  
 5 Grams
- **OPERATING TEMPERATURE:**.....  
 -55°c to +105°c (All Units Can be Supplied to Class S Requirements, +130°c).
- **TERMINALS:**.....  
 Copper Clad Steel, Tin Dipped. Solderability per MIL-STD-202 Method 208.
- **THERMAL SHOCK:**.....  
 25 Cycles, Method 107D, MIL-STD-202E, Test Condition A-1.

**Delivery—**  
**stock to one week**

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**Electronics,**  
**Inc.**

453 N. MacQuesten Pkwy.  
 Mt. Vernon, N.Y. 10552  
 914-699-5514  
 FAX 914-699-5565

PICO PART NUMBER	PRIMARY IMPEDANCE OHMS	SECONDARY IMPEDANCE OHMS SPLIT WINDINGS		POWER WATTS			PRIMARY UNBALANCED DC CURRENT ma	PRIMARY DC RESISTANCE OHMS	SECONDARY DC RESISTANCE OHMS		TURNS RATIO PRIM/SEC		*** PRICE 1-9
		SER	PAR	1KHz and higher	400 Hz and higher	300 Hz and higher			SER CONN	PAR CONN	SEC CONN	SEC PAR CONN	
76203	20 ct	8 ct	2	.6	.4	.3	30.0	2	1.2	3	1.58:1	3.16:1	26.69
76205	20 ct	20 ct	5	.6	.4	.3	30.0	2	2.8	7	1:1	2:1	26.69
76210	32 ct	32 ct	8	.6	.4	.3	23.0	3.3	4.5	1.13	1:1	2:1	26.69
76215	40 ct	40ct	10	.6	.4	.3	21.0	3.7	5	1.25	1:1	2:1	26.69
76218	48 ct	16 ct	4	.6	.4	.3	19.0	3.75	3	.75	1.73:1	3.46:1	26.69
76220	50 ct	50 ct	12.5	.6	.4	.3	19.0	5	7	1.75	1:1	2:1	26.69
76225	80 ct	32 ct	8	.6	.4	.3	15.0	7.5	4.3	1.13	1.58:1	3.16:1	26.69
76228	100 ct	40 ct	10	.6	.4	.3	13.0	10.8	5	1.25	1.58:1	3.16:1	26.69
76230	100 ct	100 ct	25	.6	.4	.3	13.0	10.8	12	3	1:1	2:1	26.69
76235	120 ct	12.8 ct	3.2	.6	.4	.3	12.0	9.3	2.2	.55	3.06:1	6.12:1	26.69
76240	120 ct	60 ct	15	.6	.4	.3	12.0	9	7.2	1.8	1.41:1	2.83:1	26.69
76245	120 ct	120 ct	30	.6	.4	.3	12.0	11.6	13	3.3	1:1	2:1	26.69
76250	150 ct	12 ct	3	.6	.4	.3	11.0	11.2	2.2	.55	3.54:1	7.08:1	26.69
76255	150 ct	50 ct	12.5	.6	.4	.3	11.0	13	6.8	1.7	1.73:1	3.46:1	26.69
76260	150 ct	100 ct	25	.6	.4	.3	11.0	13	11.8	3	1.22:1	2.45:1	26.69
76265	150 ct	150 ct	37.5	.6	.4	.3	11.0	12	18.3	4.6	1:1	2:1	26.69
76270	150 ct	600 ct	150	.6	.4	.3	11.0	13	75	19	1:2	1:1	26.69
76275	200 ct	200 ct	50	.6	.4	.3	10.0	19	21.3	5.4	1:1	2:1	26.69
76280	300 ct	12 ct	3	.6	.4	.3	8.0	24	1.7	.43	5:1	10:1	26.69
76285	300 ct	50 ct	12.5	.6	.4	.3	8.0	30	6.8	1.7	2.45:1	4.9:1	26.69
76290	300 ct	150 ct	37.5	.6	.4	.3	8.0	30	18	4.6	1.41:1	2.83:1	26.69
76295	300 ct	300 ct	75	.6	.4	.3	8.0	30	34	8.5	1:1	2:1	26.69
76300	300 ct	600 ct	150	.6	.4	.3	8.0	30	60	15	1.41:1	1.41:1	26.69
76305	320 ct	12.8 ct	3.2	.6	.4	.3	7.5	31	1.7	.43	5:1	10:1	26.69
76310	400 ct	40 ct	10	.6	.4	.3	7.0	41	4.5	1.13	3.16:1	6.32:1	26.69
76315	400 ct	120 ct	30	.6	.4	.3	7.0	41	12	3	1.83:1	3.65:1	26.69
76320	400 ct	200 ct	50	.6	.4	.3	7.0	41	21.3	5.4	1.41:1	2.83:1	26.69
76325	400 ct	400 ct	100	.6	.4	.3	7.0	41	37.5	9.4	1:1	2:1	26.69
76330	400 ct	1000 ct	250	.6	.4	.3	7.0	41	96	24	1.158	1.26:1	26.69
76335	400 ct	2000 ct	500	.6	.4	.3	7.0	41	212	53	1.224	1.1:12	26.69
76340	400 ct	4000 ct	1000	.6	.4	.3	7.0	41	375	94	1.3:16	1.1:58	26.69
76342	500 ct	12.8 ct	3.2	.6	.4	.3	6.0	48	1.7	.43	6.25:1	12.5:1	26.69
76344	500 ct	16 ct	4	.6	.4	.3	6.0	48	1.9	.5	5.6:1	11.2:1	26.69
76345	500 ct	50 ct	12.5	.6	.4	.3	6.0	39	6.8	1.7	3.16:1	6.32:1	26.69
76347	500 ct	150 ct	37.5	.6	.4	.3	6.0	48	18	4.6	1.83:1	3.65:1	26.69
76350	500 ct	500 ct	125	.6	.4	.3	6.0	48	54	13.5	1:1	2:1	26.69
76355	*500 ct	500 ct	—	.6	.4	.3	6.0	48	68	—	1:1	—	26.69
76360	500 ct	600 ct	150	.6	.4	.3	6.0	48	59	15	1.1:1	1.83:1	26.69
76365	600 ct	12.8 ct	3.2	.6	.4	.3	5.5	53	1.7	.43	6.85:1	13.7:1	26.69
76367	600 ct	30 ct	.75	.6	.4	.3	5.5	53	4.2	1.1	4.47:1	8.94:1	26.69
76370	600 ct	48 ct	12	.6	.4	.3	5.5	53	6.8	1.7	3.54:1	7.07:1	26.69
76375	600 ct	200 ct	50	.6	.4	.3	5.5	53	21.3	5.3	1.73:1	3.46:1	26.69
76380	600 ct	600 ct	150	.6	.4	.3	5.5	57	79	20	1:1	2:1	26.69
76385	*600 ct	600 ct	—	.6	.4	.3	5.5	53	75	—	1:1	—	26.69
76387	600 ct	1200 ct	300	.6	.4	.3	5.5	53	105	26	1.14:1	1.41:1	26.69
76390	640 ct	12.8 ct	3.2	.6	.4	.3	5.5	66	1.7	.43	7.07:1	14.14:1	26.69
76395	700 ct	100 ct	25	.6	.4	.3	5.0	69	12	3	2.65:1	5.29:1	26.69
76400	800 ct	12.8 ct	3.2	.6	.4	.3	5.0	75	1.7	.43	7.9:1	15.8:1	26.69
76405	800 ct	48 ct	12	.6	.4	.3	5.0	75	6.8	1.7	4.08:1	8.16:1	26.69
76410	800 ct	800 ct	200	.6	.4	.3	5.0	75	105	26	1:1	2:1	26.69
76415	900 ct	600 ct	150	.6	.4	.3	4.5	79	75	19	1.22:1	2.45:1	26.69
76420	1000 ct	12 ct	3	.6	.4	.3	4.5	103	1.6	.4	9.13:1	18.3:1	26.69
76425	1000 ct	50 ct	12.5	.6	.4	.3	4.5	103	6.4	1.6	4.47:1	8.94:1	26.69
76430	1000 ct	1000 ct	250	.6	.4	.3	4.5	103	115	28	1:1	2:1	26.69
76435	1060 ct	12.8 ct	3.2	.6	.4	.3	4.0	108	1.7	.43	9.1:1	18.2:1	26.69
76440	1200 ct	12.8 ct	3.2	.6	.4	.3	4.0	113	1.7	.43	9.68:1	19.4:1	26.69
76445	1200 ct	500 ct	125	.6	.4	.3	4.0	113	54	13.5	1.55:1	3.1:1	26.69
76450	1200 ct	1200 ct	300	.6	.4	.3	4.0	113	126	31.6	1:1	2:1	26.69
76455	*1200 ct	1200 ct	—	.6	.4	.3	4.0	111	125	—	1:1	—	26.69
76460	1500 ct	12 ct	3	.6	.4	.3	3.5	126	1.6	.4	11.2:1	22.4:1	26.69
76465	1500 ct	500 ct	125	.6	.4	.3	3.5	126	68	17	1.73:1	3.46:1	26.69
76470	*1500 ct	600 ct	—	.6	.4	.3	3.5	126	94	—	1.58:1	—	26.69
76475	*1500 ct	1500 ct	—	.6	.4	.3	3.5	126	176	—	1:1	—	26.69
76480	1600 ct	12.8 ct	3.2	.6	.4	.3	3.5	130	1.7	.43	11.2:1	22.4:1	26.69
76483	2000 ct	8 ct	2	.6	.4	.3	3.0	210	1.2	.3	15.8:1	31.6:1	26.69
76485	2000 ct	2000 ct	500	.6	.4	.3	3.0	198	218	55	1:1	2:1	26.69
76490	*2000 ct	2000 ct	—	.6	.4	.3	3.0	198	218	—	1:1	—	26.69
76495	2000 ct	8000 ct	2000	.6	.4	.3	3.0	198	850	213	1:2	1:1	26.69
76497	2500 ct	2500 ct	625	.6	.4	.3	2.5	220	305	76	1:1	2:1	26.69
76500	3000 ct	3000 ct	750	.6	.4	.3	2.5	243	335	84	1:1	2:1	26.69

\*\*\*Discount Prices: 1-9 Net; 10-24 less 10%; 25-49 less 16%; 50-99 less 23%; 100-499 less 30%  
 Ordering Instructions: No minimum. Net 30 days F.O.B. Mt. Vernon, New York.

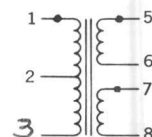
\*INCLUDES ELECTROSTATIC SHIELD  
 \*\*MINIATURIZED TELEPHONE COUPLING APPLICATION

For immediate engineering assistance or to place an order—Call Toll Free 800-431-1064

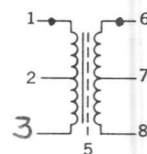


**SURFACE MOUNT**  
PICO surface mount units utilize materials and methods to withstand extreme temperature (220°C) of vapor phase, I.R., and other reflow procedures without degradation of electrical or mechanical characteristics.

**SURFACE MOUNT SCHEMATIC FOR TRANSFORMERS WITH SPLIT WINDING**



**SCHEMATIC FOR TRANSFORMERS WITH ELECTROSTATIC SHIELD**



**FEATURES**

- EXTREME RESISTANCE TO THERMAL SHOCK
- ULTRA MINIATURE SIZE
- PICO IS APPROVED QPL SOURCE (MIL-T-27)
- MAGNETIC SHIELDS AVAILABLE
- ELECTROSTATIC SHIELDING CAN BE ADDED.
- VARIATION OF STANDARD DESIGNS AVAILABLE
- PRIMARY AND SECONDARY WINDINGS CAN BE USED EITHER AS INPUT OR OUTPUT.
- SPECIAL PRODUCTION TECHNIQUES ENSURE UNIFORM SIZE AND LEADS WHICH ARE FREE OF ENCAPSULANT. NO MENISCUS IN LEAD AREA.
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**Delivery—  
stock to one week**

**PICO  
Electronics,  
Inc.**

453 N. MacQuesten Pkwy.  
Mt. Vernon, N.Y. 10552

914-699-5514

FAX 914-699-5565

PICO PART NUMBER	PRIMARY IMPEDANCE OHMS	SECONDARY IMPEDANCE OHMS SPLIT WINDINGS		POWER WATTS			PRIMARY UNBALANCED DC CURRENT ma	PRIMARY DC RESISTANCE OHMS	SECONDARY DC RESISTANCE OHMS		TURNS RATIO PRIM/SEC		*** PRICE 1-9
		SER	PAR	1KHz and higher	400 Hz and higher	300 Hz and higher			SER CONN	PAR CONN	SER CONN	PAR CONN	
76505	*3000 ct	3000 ct	—	.6	.4	.3	2.5	304	335	—	1:1	—	27.79
76510	3600 ct	3600 ct	900	.6	.4	.3	2.5	330	366	92	1:1	2:1	26.69
76512	4000 ct	16 ct	4	.6	.4	.3	2.0	350	3	.75	15.8:1	31.6:1	26.69
76514	4000 ct	600 ct	150	.6	.4	.3	2.0	350	76	19	2.58:1	5.16:1	26.69
76515	4000 ct	1000 ct	250	.6	.4	.3	2.0	350	115	29	2:1	4:1	26.69
76520	*4000 ct	8000 ct	—	.6	.4	.3	2.0	350	1062	—	1:1.41	—	27.79
76525	5000 ct	500 ct	125	.6	.4	.3	2.0	350	67	17	3.16:1	6.32:1	26.69
76530	5000 ct	5000 ct	1250	.6	.4	.3	2.0	390	538	135	1:1	2:1	26.69
76535	7500 ct	50 ct	12.5	.6	.4	.3	1.5	600	7	1.75	12.2:1	24.5:1	29.61
76540	7500 ct	100 ct	25	.6	.4	.3	1.5	600	12	3	8.66:1	17.3:1	29.61
76545	7500 ct	600 ct	150	.6	.4	.3	1.5	600	78	19.5	3.54:1	7.07:1	29.61
76550	7500 ct	2500 ct	625	.6	.4	.3	1.5	600	305	77	1.73:1	3.46:1	29.61
76555	*7500 ct	7500 ct	—	.6	.4	.3	1.5	750	828	—	1:1	—	31.70
76560	8000 ct	12.8 ct	3.2	.6	.4	.3	1.5	750	1.7	.43	25:1	50:1	29.61
76565	8000 ct	1000 ct	250	.6	.4	.3	1.5	750	115	29	2.83:1	5.66:1	29.61
76570	*8000 ct	1200 ct	—	.6	.4	.3	1.5	750	158	—	2.58:1	—	31.70
76575	*9000 ct	9000 ct	—	.6	.4	.3	1.4	796	1100	—	1:1	—	31.70
76580	10,000 ct	12.8 ct	3.2	.6	.4	.3	1.4	1048	1.7	.43	28:1	56:1	29.61
76585	10,000 ct	16 ct	4	.6	.4	.3	1.4	1048	3	.75	25:1	50:1	29.61
76590	10,000 ct	100 ct	25	.6	.4	.3	1.4	839	12	3	10:1	20:1	29.61
76595	10,000 ct	200 ct	50	.6	.4	.3	1.4	839	27	6.7	7.07:1	14.14:1	29.61
76600	10,000 ct	500 ct	125	.6	.4	.3	1.4	850	67	17	4.47:1	8.94:1	29.61
76605	10,000 ct	600 ct	150	.6	.4	.3	1.4	850	74	18.5	4.08:1	8.16:1	29.61
76610	10,000 ct	1000 ct	250	.6	.4	.3	1.4	850	115	29	3.16:1	6.32:1	29.61
76615	10,000 ct	1200 ct	300	.6	.4	.3	1.4	850	158	39.5	2.89:1	5.77:1	29.61
76620	10,000 ct	1500 ct	375	.6	.4	.3	1.4	850	177	44	2.58:1	5.16:1	29.61
76625	10,000 ct	2000 ct	500	.6	.4	.3	1.4	850	255	64	2.24:1	4.47:1	29.61
76630	10,000 ct	5000 ct	1250	.6	.4	.3	1.4	850	630	158	1.41:1	2.83:1	29.61
76635	10,000 ct	7500 ct	1875	.6	.4	.3	1.4	850	772	193	1.15:1	2.3:1	29.61
76640	10,000 ct	10,000 ct	2500	.6	.4	.3	1.4	866	1215	304	1:1	2:1	29.61
76645	*10,000 ct	10,000 ct	—	.6	.4	.3	1.4	1060	1215	—	1:1	—	31.70
76650	15,000 ct	400 ct	100	.6	.4	.3	1.0	1305	47	12	6.12:1	12.24:1	29.61
76652	15,000 ct	500 ct	125	.6	.4	.3	1.0	1305	53	13	5.48:1	10.95:1	29.61
76655	15,000 ct	600 ct	150	.6	.4	.3	1.0	1305	72.5	18	5:1	10:1	29.61
76660	15,000 ct	10,000 ct	2500	.6	.4	.3	1.0	1305	1215	304	1.22:1	2.45:1	29.61
76665	*15,000 ct	15,000 ct	—	.6	.4	.3	1.0	1305	1800	—	1:1	—	31.70
76670	15,000 ct	15,000 ct	3750	.6	.4	.3	1.0	1305	1800	450	1:1	2:1	29.61
76675	16,000 ct	1000 ct	250	.6	.4	.3	1.0	1343	115	29	4:1	8:1	29.61
76680	20,000 ct	500 ct	125	.5	.4	.3	1.0	1560	68	17	6.33:1	12.65:1	31.70
76685	20,000 ct	600 ct	150	.5	.4	.3	1.0	1560	75	19	5.77:1	11.55:1	31.70
76690	20,000 ct	800 ct	200	.5	.4	.3	1.0	1560	108	27	5:1	10:1	31.70
76695	20,000 ct	1000 ct	250	.5	.4	.3	1.0	1560	121	30.5	4.47:1	8.94:1	31.70
76700	20,000 ct	5000 ct	1250	.5	.4	.3	1.0	1560	672	168	2:1	4:1	31.70
76705	20,000 ct	10,000 ct	2500	.5	.4	.3	1.0	1560	1520	380	1.41:1	2.83:1	31.70
76710	*20,000 ct	20,000 ct	—	.5	.4	.3	1.0	1560	2727	682	1:1	—	32.98
76715	25,000 ct	500 ct	125	.4	.4	.3	0.8	2170	68	17	7.07:1	14.14:1	31.70
76720	25,000 ct	1000 ct	250	.4	.4	.3	0.8	2170	120	30	5:1	10:1	31.70
76725	30,000 ct	50 ct	12.5	.33	.33	.3	0.8	2400	7	1.75	24.5:1	49:1	32.98
76730	30,000 ct	1200 ct	300	.33	.33	.3	0.8	2400	156	39	5:1	10:1	32.98
76732	30,000 ct	500 ct	125	.33	.33	.3	0.8	2400	68	17	7.75:1	15.5:1	32.98
76734	30,000 ct	200 ct	50	.33	.33	.3	0.8	2400	29	7.2	12.25:1	24.5:1	32.98
76735	30,000 ct	5000 ct	1250	.33	.33	.3	0.8	2400	673	169	2.45:1	4.9:1	32.98
76740	30,000 ct	10,000 ct	2500	.33	.33	.3	0.8	2400	1520	380	1.73:1	3.46:1	32.98
76745	*30,000 ct	30,000 ct	—	.33	.33	.3	0.8	3000	3310	—	1:1	—	35.41
76750	40,000 ct	400 ct	100	.25	.25	.25	0.7	3400	57	14.3	10:1	20:1	35.41
76755	40,000 ct	2000 ct	500	.25	.25	.25	0.7	3400	268	67	4.47:1	8.94:1	35.41
76760	40,000 ct	4000 ct	1000	.25	.25	.25	0.7	3400	476	119	3.16:1	6.32:1	35.41
76765	40,000 ct	20,000 ct	5000	.25	.25	.25	0.7	3400	2700	675	1.41:1	2.83:1	35.41
76770	*40,000 ct	40,000 ct	—	.25	.25	.25	0.7	3400	4750	—	1:1	—	39.49
76775	50,000 ct	200 ct	50	.2	.2	.2	0.6	4850	27	6.7	15.8:1	31.6:1	39.49
76777	50,000 ct	500 ct	125	.2	.2	.2	0.6	4850	68	17	10:1	20:1	39.49
76779	50,000 ct	600 ct	150	.2	.2	.2	0.6	4850	75	18.5	9.13:1	18.26:1	39.49
76780	60,000 ct	15,000 ct	3750	.16	.16	.16	0.5	5275	2250	563	2:1	4:1	42.58
76785	62,500 ct	50 ct	12.5	.16	.16	.16	0.5	5445	8.7	2.2	35.4:1	70.7:1	42.58
76787	80,000 ct	15,000 ct	3750	.12	.12	.12	0.4	6130	2250	563	2.3:1	4.6:1	42.58
76790	90,000 ct	10,000 ct	2500	.1	.1	.1	0.4	8140	1520	380	3:1	6:1	44.74
76795	95,000 ct	15,000 ct	3750	.1	.1	.1	0.4	8400	2250	563	2.52:1	5.03:1	44.74
76800	100,000 ct	60 ct	15	.1	.1	.1	0.4	8750	9.2	2.3	40.8:1	81.6:1	44.74
76805	100,000 ct	100 ct	25	.1	.1	.1	0.4	8750	15	3.8	31.6:1	63.2:1	44.74
76810	100,000 ct	500 ct	125	.1	.1	.1	0.4	8750	68	17	14.1:1	28.3:1	44.74
76815	100,000 ct	10,000 ct	2500	.1	.1	.1	0.4	8750	1535	385	3.16:1	6.32:1	44.74

\*\*\* Discount Prices: 1-9 Net; 10-24 less 10%; 25-49 less 16%; 50-99 less 23%; 100-499 less 30%  
Ordering Instructions: No minimum. Net 30 days F.O.B. Mt. Vernon, New York.

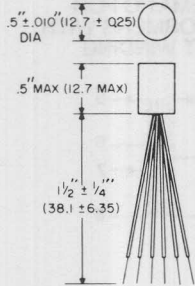
\*INCLUDES ELECTROSTATIC SHIELD

For immediate engineering assistance or to place an order—Call Toll Free 800-431-1064

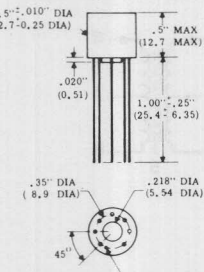
# PICO's ultra-miniature transformers

For Surface Mount  
Versions of this series,  
see pages 20 and 21

## K SERIES Insulated Leads



## N SERIES Plug-In



WHITE DOT AT TERMINAL #1  
TERMINALS CLOCKWISE FROM  
PIN #1

Dimensions are in inches (MM)

## SPECIFICATIONS

- **MIL-T-27:** .....  
All units manufactured to MIL-T-27, and are Hermetically Sealed in a Metal Case. Audio Transformers are Type TFSR21ZZ.
- **FREQUENCY RESPONSE:** .....  
±3db, 150 Hz-75 KHz at 1.0 Milliwatt. (When Primary Impedance ≥ 50K Ohms, ±3 db 150 Hz to 20 KHz)
- **MAXIMUM DISTORTION:** .....  
5% With Rated Power Level at 1 KHz, 400 Hz and 150 Hz.
- **DIELECTRIC STRENGTH:** .....  
All Units Tested at 200 V RMS.
- **INSULATION RESISTANCE:** .....  
Greater Than 10,000 Megohms at 200 V DC.
- **WEIGHT:** .....  
7.5 Grams
- **OPERATING TEMPERATURE:** .....  
-55°c to +105°c (All Units Can be Supplied to Class S Requirements, +130°c).
- **TERMINALS:** .....  
Solid .016 Diameter Conductor. Conductor is Copper Clad Steel. Tinned 100%. Electroplated Per Mil-T-10727A and ASTM CCS B452.
- **THERMAL SHOCK:** .....  
25 Cycles, Method 107C, MIL-STD-202D, Test Condition A-1.

Delivery:  
Stock to one week

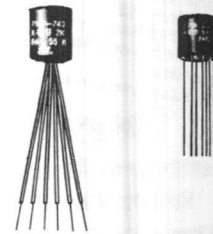
THIS PRODUCT IS PATENTED

These units can be manufactured and tested to MIL-T-27/358.  
Contact factory for price and delivery information and  
appropriate parts numbers (MIL-T-27/358-01 thru MIL-T-27/358-123).

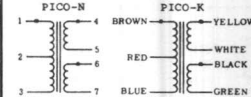
PICO PART NUMBER		SECONDARY IMPEDANCE			POWER WATTS					SECONDARY DC		TURNS RATIO		PICO	
K-Series Insulated Leads	N-Series Plug-In	PRIMARY IMPEDANCE OHMS	OHMS SPLIT WINDINGS		1KHz and higher	400 Hz and higher	150 Hz and higher	PRIMARY UNBALANCED DC CURRENT ma	PRIMARY DC RESISTANCE OHMS	RESISTANCE OHMS		SEC SER CONN	SEC PAR CONN	K-Series	N-Series
			SER	PAR						SER CONN	PAR CONN				
K-7203	N-6203	20 ct	8 ct	2	1.0	.75	.11	22.0	1.75	1.0	.25	1.58:1	3.16:1	23.44	24.26
K-7205	N-6205	20 ct	20 ct	5	1.0	.75	.11	22.0	1.75	2.5	.63	1:1	2:1	23.44	24.26
K-7210	N-6210	32 ct	32 ct	8	1.0	.75	.11	18.0	2.7	3.7	.93	1:1	2:1	23.44	24.26
K-7215	N-6215	40 ct	40 ct	10	1.0	.75	.11	16.0	3	5.2	1.3	1:1	2:1	23.44	24.26
K-7218	N-6218	48 ct	16ct	4	1.0	.75	.11	13.0	4.5	2.4	.6	1.73:1	3.46:1	23.44	24.26
K-7220	N-6220	50 ct	50 ct	12.5	1.0	.75	.11	13.0	4.5	6.2	1.6	1:1	2:1	23.44	24.26
K-7225	N-6225	80 ct	32 ct	8	1.0	.75	.11	11.0	6.6	3.7	.93	1.58:1	3.16:1	23.44	24.26
K-7228	N-6228	100 ct	40 ct	10	1.0	.75	.11	10.0	9.7	5.6	1.4	1.58:1	3.16:1	23.44	24.26
K-7230	N-6230	100 ct	100 ct	25	1.0	.75	.11	10.0	9.7	11	2.8	1:1	2:1	23.44	24.26
K-7235	N-6235	120 ct	12.8 ct	3.2	1.0	.75	.11	9.0	10.8	1.6	.4	3.06:1	6.12:1	23.44	24.26
K-7240	N-6240	120 ct	60 ct	15	1.0	.75	.11	9.0	10.8	8.5	2.2	1.41:1	2.83:1	23.44	24.26
K-7245	N-6245	120 ct	120 ct	30	1.0	.75	.11	9.0	10.8	15	3.8	1:1	2:1	23.44	24.26
K-7250	N-6250	150 ct	12 ct	3	1.0	.75	.11	8.0	13.5	1.75	.44	3.54:1	7.08:1	23.44	24.26
K-7255	N-6255	150 ct	50 ct	12.5	1.0	.75	.11	8.0	12	5.8	1.5	1.73:1	3.46:1	23.44	24.26
K-7260	N-6260	150 ct	100 ct	25	1.0	.75	.11	8.0	12	13	3.3	1.22:1	2.44:1	23.44	24.26
K-7265	N-6265	150 ct	150 ct	37.5	1.0	.75	.11	8.0	12	20	5	1:1	2:1	23.44	24.26
K-7270	N-6270	150 ct	600 ct	150	1.0	.75	.11	8.0	12	82	20.5	1:2	1:1	23.44	24.26
K-7275	N-6275	200 ct	200 ct	50	1.0	.75	.11	7.0	17	24	6.0	1:1	2:1	23.44	24.26
K-7280	N-6280	300 ct	12 ct	3	1.0	.75	.11	5.0	30	1.75	.44	5:1	10:1	23.44	24.26
K-7285	N-6285	300 ct	50 ct	12.5	1.0	.75	.11	5.0	27	6.2	1.6	2.45:1	4.9:1	23.44	24.26
K-7290	N-6290	300 ct	150 ct	37.5	1.0	.75	.11	5.0	26	21	5.3	1.41:1	2.83:1	23.44	24.26
K-7295	N-6295	300 ct	300 ct	75	1.0	.75	.11	5.0	27	38	9.5	1:1	2:1	23.44	24.26
K-7300	N-6300	300 ct	600 ct	150	1.0	.75	.11	5.0	27	66	17	1.41:1	1.41:1	23.44	24.26
K-7305	N-6305	320 ct	12.8 ct	3.2	1.0	.75	.11	5.0	30	1.75	.44	5:1	10:1	23.44	24.26
K-7310	N-6310	400 ct	40 ct	10	1.0	.75	.11	5.0	39	4.3	1.1	3.16:1	6.32:1	23.44	24.26
K-7315	N-6315	400 ct	120 ct	30	1.0	.75	.11	5.0	30	14	3.5	1.83:1	3.65:1	23.44	24.26
K-7320	N-6320	400 ct	200 ct	50	1.0	.75	.11	5.0	39	24	6	1.41:1	2.83:1	23.44	24.26
K-7325	N-6325	400 ct	400 ct	100	1.0	.75	.11	5.0	39	42	10.5	1:1	2:1	23.44	24.26
K-7330	N-6330	400 ct	1000 ct	250	1.0	.75	.11	5.0	39	109	28	1:1.58	1.26:1	23.44	24.26
K-7335	N-6335	400 ct	2000 ct	500	1.0	.75	.11	5.0	39	198	49	1:2.24	1:1.12	23.44	24.26
K-7340	N-6340	400 ct	4000 ct	1000	1.0	.75	.11	5.0	39	436	109	1:3.16	1:1.58	23.44	24.26
K-7342	N-6342	500 ct	12.8 ct	3.2	1.0	.75	.11	4.5	43	1.6	.4	6.25:1	12.5:1	23.44	24.26
K-7344	N-6344	500 ct	16 ct	4	1.0	.75	.11	4.5	43	2.3	.56	5.6:1	11.2:1	23.44	24.26
K-7345	N-6345	500 ct	50 ct	12.5	1.0	.75	.11	4.5	43	5.8	1.5	3.16:1	6.32:1	23.44	24.26
K-7347	N-6347	500 ct	150 ct	37.5	1.0	.75	.11	4.5	43	19.8	5	1.83:1	3.65:1	23.44	24.26
K-7350	N-6350	500 ct	500 ct	125	1.0	.75	.11	4.5	43	60	15	1:1	2:1	23.44	24.26
K-7355	N-6355	*500 ct	500 ct	-	1.0	.75	.11	4.5	43	60	-	1:1	-	24.26	25.26
K-7360	N-6360	500 ct	600 ct	150	1.0	.75	.11	4.5	43	66	17	1:1.1	1.83:1	23.44	24.26
K-7365	N-6365	600 ct	12.8 ct	3.2	1.0	.75	.11	4.0	68	1.75	.44	6.85:1	13.7:1	23.44	24.26
K-7367	N-6367	600 ct	30 ct	7.5	1.0	.75	.11	4.0	60	3.7	.93	4.47:1	8.94:1	23.44	24.26
K-7370	N-6370	600 ct	48 ct	12	1.0	.75	.11	4.0	60	5.9	1.5	3.54:1	7.07:1	23.44	24.26
K-7375	N-6375	600 ct	200 ct	50	1.0	.75	.11	4.0	60	25	6.3	1.73:1	3.46:1	23.44	24.26
K-7380**	N-6380**	600 ct	600 ct	150	1.0	.75	.11	4.0	60	66	17	1:1	2:1	23.44	24.26
K-7385**	N-6385**	*600 ct	600 ct	-	1.0	.75	.11	4.0	60	68	-	1:1	-	24.26	25.26
K-7386**	N-6386**	*600 ct	900 ct	-	1.0	.75	.11	4.0	60	104	-	1:1.22	-	24.26	25.26
K-7387**	N-6387**	600 ct	1200 ct	300	1.0	.75	.11	4.0	60	116	29	1:1.41	1.41:1	23.44	24.26
K-7390	N-6390	640 ct	12.8 ct	3.2	1.0	.75	.11	4.0	69	1.75	.44	7.07:1	14.14:1	23.44	24.26
K-7395	N-6395	700 ct	100 ct	25	1.0	.75	.11	4.0	62	10.6	2.7	2.65:1	5.29:1	23.44	24.26
K-7400	N-6400	800 ct	12.8 ct	3.2	1.0	.75	.11	3.5	78	1.75	.44	7.91:1	15.8:1	23.44	24.26
K-7405	N-6405	800 ct	48 ct	12	1.0	.75	.11	3.5	74	6	1.5	4.08:1	8.16:1	23.44	24.26
K-7410	N-6410	800 ct	800 ct	200	1.0	.75	.11	3.5	74	102	26	1:1	2:1	23.44	24.26
K-7415	N-6415	900 ct	600 ct	150	1.0	.75	.11	3.0	90	66	17	1.23:1	2.45:1	23.44	24.26
K-7417**	N-6417**	*900 ct	900 ct	-	1.0	.75	.11	3.0	90	102	-	1:1	-	24.26	25.26
K-7420	N-6420	1000 ct	12 ct	3	1.0	.75	.11	3.0	115	1.75	.44	9.13:1	18.26:1	23.44	24.26
K-7425	N-6425	1000 ct	50 ct	12.5	1.0	.75	.11	3.0	100	5.8	1.5	4.47:1	8.94:1	23.44	24.26
K-7430	N-6430	1000 ct	1000 ct	250	1.0	.75	.11	3.0	75	103	26	1:1	2:1	23.44	24.26
K-7435	N-6435	1060 ct	12.8 ct	3.2	1.0	.75	.11	3.0	115	1.75	.44	9.1:1	18.2:1	23.44	24.26
K-7440	N-6440	1200 ct	12.8 ct	3.2	1.0	.75	.11	3.0	122	1.75	.44	9.68:1	19.4:1	23.44	24.26
K-7445	N-6445	1200 ct	500 ct	125	1.0	.75	.11	3.0	113	63	16	1.55:1	3.1:1	23.44	24.26
K-7450	N-6450	1200 ct	1200 ct	300	1.0	.75	.11	3.0	113	155	39	1:1	2:1	23.44	24.26
K-7455	N-6455	*1200 ct	1200 ct	-	1.0	.75	.11	3.0	109	150	-	1:1	-	24.26	25.26
K-7460	N-6460	1500 ct	12 ct	3	1.0	.75	.11	2.5	140	1.75	.44	11.18:1	22.36:1	23.44	24.26
K-7465	N-6465	1500 ct	500 ct	125	1.0	.75	.11	2.5	150	60	15	1.73:1	3.46:1	23.44	24.26
K-7470	N-6470	*1500 ct	600 ct	-	1.0	.75	.11	2.5	150	66	-	1.58:1	-	24.26	25.26
K-7475	N-6475	*1500 ct	1500 ct	-	1.0	.75	.11	2.5	150	168	-	1:1	-	24.26	25.26
K-7480	N-6480	1600 ct	12.8 ct	3.2	1.0	.75	.11	2.5	140	1.75	.44	11.18:1	22.36:1	23.44	24.26
K-7483	N-6483	2000 ct	8 ct	2	1.0	.75	.11	2.0	250	1.0	.25	15.8:1	31.6:1	23.44	24.26
K-7485	N-6485	2000 ct	2000 ct	500	1.0	.75	.11	2.0	185	255	64	1:1	2:1	23.44	24.26
K-7490	N-6490	*2000 ct	2000 ct	-	1.0	.75	.11	2.0	175	240	-	1:1	-	24.26	25.26
K-7495	N-6495	2000 ct	8000 ct	2000	1.0	.75	.11	2.0	185	1015	254	1:2	1:1	23.44	24.26
K-7497	N-6497	2500 ct	2500 ct	625	1.0	.75	.11	2.0	245	268	68	1:1	2:1	23.44	24.26
K-7500	N-6500	3000 ct	3000 ct	750	1.0	.75	.11	1.8	267	295	74	1:1	2:1	23.44	24.26
K-7505	N-6505	*3000ct	3000 ct	-	1.0	.75	.11	1.8	267	368	-	1:1	-	24.26	25.26
K-7510	N-6510	3600 ct	3600 ct	900	1.0	.75	.11	1.5	300	413	103	1:1	2:1	23.44	24.23
K-7512	N-6512	4000 ct	16 ct	4	1.0	.75	.11	1.5	395	2.5	.65	15.8:1	31.6:1	23.44	24.26
K-7514**	N-6514**	4000 ct	600 ct	150	1.0	.75	.11	1.5	395	66	17	2.58:1	5.16:1	23.44	24.26



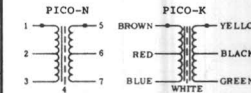
# K SERIES N SERIES Insulated Plug-In Leads



SCHEMATIC FOR TRANSFORMERS WITH SPLIT SECONDARIES



SCHEMATIC FOR TRANSFORMERS WITH ELECTROSTATIC SHIELD



## FEATURES

- EXTREME RESISTANCE TO THERMAL SHOCK
- ULTRA MINIATURE SIZE
- PICO IS APPROVED QPL SOURCE (MIL-T-27)
- MAGNETIC SHIELDS AVAILABLE
- ELECTROSTATIC SHIELDING CAN BE ADDED.
- VARIATION OF STANDARD DESIGNS AVAILABLE
- PRIMARY AND SECONDARY WINDINGS CAN BE USED EITHER AS INPUT OR OUTPUT.
- SPECIAL PRODUCTION TECHNIQUES ENSURE UNIFORM SIZE AND LEADS WHICH ARE FREE OF ENCAPSULANT, NO MENISCUS IN LEAD AREA.
- EVERY UNIT IN THIS CATALOG CAN BE MADE WITH A 300 THERMAL CYCLE GUARANTEE USING PICO'S SPECIAL SR CONSTRUCTION. CONTACT FACTORY FOR DETAILS.

**PICO Electronics, Inc.**

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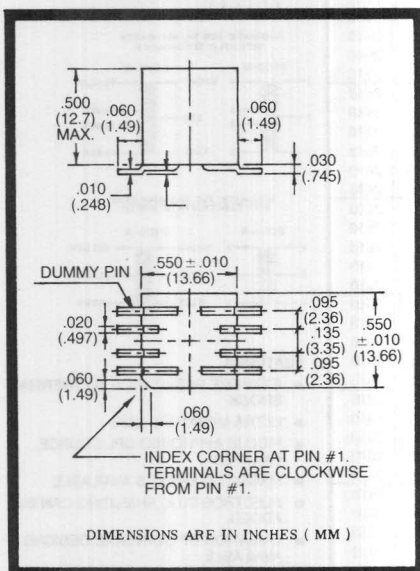
PICO PART NUMBER		SECONDARY IMPEDANCE				POWER WATTS					SECONDARY DC		TURNS RATIO		PICO		
K-Series Insulated Leads	N-Series Plug-In	PRIMARY IMPEDANCE OHMS	SPLIT WINDINGS		1KHz and higher	400 Hz and higher	150 Hz and higher	PRIMARY UNBALANCED DC CURRENT ma	PRIMARY DC RESISTANCE OHMS	RESISTANCE OHMS		SEC SER CONN	SEC PAR CONN	SEC SER CONN	SEC PAR CONN	K-Series	N-Series
			SER	PAR						SER CONN	PAR CONN						
K-7515	N-6515	4000 ct	1000 ct	250	1.0	.75	.11	1.5	395	108	27	2:1	4:1	23.49	24.26		
K-7520	N-6520	*4000 ct	8000 ct	—	1.0	.75	.11	1.5	390	955	—	1:1.41	—	24.26	25.26		
K-7525	N-6525	5000 ct	500 ct	125	1.0	.75	.11	1.3	450	62	16	3.16:1	6.32:1	23.44	24.26		
K-7530	N-6530	5000 ct	5000 ct	1250	1.0	.75	.11	1.3	450	620	155	1:1	2:1	23.44	24.27		
K-7535	N-6535	7500 ct	50 ct	12.5	1.0	.75	.11	1.0	670	6	1.5	12.25:1	24.5:1	26.14	26.93		
K-7540	N-6540	7500 ct	100 ct	25	1.0	.75	.11	1.0	670	11	2.8	8.66:1	17.32:1	26.14	26.93		
K-7545	N-6545	7500 ct	600 ct	150	1.0	.75	.11	1.0	670	66	16.5	3.54:1	7.07:1	26.14	26.93		
K-7550	N-6550	7500 ct	2500 ct	625	1.0	.75	.11	1.0	670	268	67	1.73:1	3.46:1	26.14	26.93		
K-7555	N-6555	*7500 ct	7500 ct	—	1.0	.75	.11	1.0	670	925	—	1:1	—	26.91	29.69		
K-7560	N-6560	8000 ct	12.8 ct	3.2	1.0	.75	.11	1.0	765	1.75	.44	25:1	50:1	26.14	26.93		
K-7565	N-7565	8000 ct	1000 ct	250	1.0	.75	.11	1.0	695	106	26.5	2.83:1	5.66:1	26.14	26.93		
K-7570	N-6570	*8000 ct	1200 ct	—	1.0	.75	.11	1.0	715	153	—	2.58:1	—	26.91	29.69		
K-7575	N-6575	*9000 ct	9000 ct	—	1.0	.75	.11	1.0	925	1020	—	1:1	—	26.91	29.69		
K-7580	N-6580	10,000 ct	12.8 ct	3.2	1.0	.75	.11	1.0	768	1.6	.4	28:1	56:1	26.14	26.93		
K-7585	N-6585	10,000 ct	16 ct	4	1.0	.75	.11	1.0	756	1.7	.43	25:1	50:1	26.14	26.93		
K-7590	N-6590	10,000 ct	100 ct	25	1.0	.75	.11	1.0	780	10	2.5	10:1	20:1	26.14	26.93		
K-7595	N-6595	10,000 ct	200 ct	50	1.0	.75	.11	1.0	780	24	6	7.07:1	14.14:1	26.14	26.93		
K-7600	N-6600	10,000 ct	500 ct	125	1.0	.75	.11	1.0	780	60	15	4.47:1	8.94:1	26.14	26.93		
K-7605	N-6605	10,000 ct	600 ct	150	1.0	.75	.11	1.0	780	83	21	4.08:1	8.16:1	26.14	26.93		
K-7610	N-6610	10,000 ct	1000 ct	250	1.0	.75	.11	1.0	780	106	27	3.16:1	6.32:1	26.14	26.93		
K-7615	N-6615	10,000 ct	1200 ct	300	1.0	.75	.11	1.0	780	145	36	2.89:1	5.77:1	26.14	26.93		
K-7620	N-6620	10,000 ct	1500 ct	375	1.0	.75	.11	1.0	780	160	40	2.58:1	5.16:1	26.14	26.93		
K-7625	N-6625	10,000 ct	2000 ct	500	1.0	.75	.11	1.0	780	300	75	2.24:1	4.47:1	26.14	26.93		
K-7630	N-6630	10,000 ct	5000 ct	1250	1.0	.75	.11	1.0	780	610	153	1.41:1	2.83:1	26.14	26.93		
K-7635	N-6635	10,000 ct	7500 ct	1875	1.0	.75	.11	1.0	780	932	233	1.16:1	2.31:1	26.14	26.93		
K-7640	N-6640	10,000 ct	10,000 ct	2500	1.0	.75	.11	1.0	780	1075	269	1:1	2:1	26.14	26.93		
K-7645	N-6645	*10,000 ct	10,000 ct	—	1.0	.75	.11	1.0	715	985	—	1:1	—	26.91	29.69		
K-7650	N-6650	15,000 ct	400 ct	100	.66	.66	.11	0.8	1165	52	13	6.12:1	12.25:1	26.14	26.93		
K-7652	N-6652	15,000 ct	500 ct	125	.66	.66	.11	0.8	1165	60	15	5.48:1	10.95:1	26.14	26.93		
K-7655	N-6655	15,000 ct	600 ct	150	.66	.66	.11	0.8	1165	80	20	5:1	10:1	26.14	26.93		
K-7660	N-6660	15,000 ct	10,000 ct	2500	.66	.66	.11	0.8	1165	1050	263	1.22:1	2.45:1	26.14	26.93		
K-7665	N-6665	*15,000 ct	15,000 ct	—	.66	.66	.11	0.8	1165	1600	—	1:1	—	26.91	29.69		
K-7670	N-6670	15,000 ct	15,000 ct	3750	.66	.66	.11	0.8	1165	1600	400	1:1	2:1	26.14	26.93		
K-7675	N-6675	16,000 ct	1000 ct	250	.62	.62	.11	0.8	1560	108	27	4:1	8:1	26.14	26.93		
K-7680	N-6680	20,000 ct	500 ct	125	.5	.5	.11	0.7	1750	60	15	6.32:1	12.65:1	26.14	25.93		
K-7685	N-6685	20,000 ct	600 ct	150	.5	.5	.11	0.7	1750	82	20.5	5.77:1	11.55:1	26.14	26.99		
K-7690	N-6690	20,000 ct	800 ct	200	.5	.5	.11	0.7	1750	98	24.5	5:1	10:1	26.14	26.99		
K-7695	N-6695	20,000 ct	1000 ct	250	.5	.5	.11	0.7	1750	135	34	4.47:1	8.94:1	26.14	26.99		
K-7700	N-6700	20,000 ct	5000 ct	1250	.5	.5	.11	0.7	1750	610	153	2:1	4:1	26.14	26.99		
K-7705	N-6705	20,000 ct	10,000 ct	2500	.5	.5	.11	0.7	1750	1075	269	1.41:1	2.83:1	26.14	29.69		
K-7710	N-6710	*20,000 ct	20,000 ct	—	.5	.5	.11	0.7	1715	2370	—	1:1	—	28.82	29.69		
K-7715	N-6715	25,000 ct	500 ct	125	.4	.4	.11	0.6	2470	60	15	7.07:1	14.14:1	26.14	29.98		
K-7720	N-6720	25,000 ct	1000 ct	250	.4	.4	.11	0.6	2470	106	27	5:1	10:1	26.14	29.69		
K-7725	N-6725	30,000 ct	50 ct	12.5	.33	.33	.11	0.5	2730	6.2	1.6	24.5:1	49:1	28.82	29.69		
K-7730	N-6730	30,000 ct	1200 ct	300	.33	.33	.11	0.5	2815	156	39	5:1	10:1	28.82	29.98		
K-7732	N-6732	30,000 ct	500 ct	125	.33	.33	.11	0.5	2730	61	15.3	7.7:1	15.5:1	28.82	29.98		
K-7734	N-6734	30,000 ct	200 ct	50	.33	.33	.11	0.5	2730	24	6	12.2:1	24.5:1	28.82	29.98		
K-7735	N-6735	30,000 ct	5000 ct	1250	.33	.33	.11	0.5	2730	620	155	2.45:1	4.9:1	28.82	29.98		
K-7740	N-6740	30,000 ct	10,000 ct	2500	.33	.33	.11	0.5	2730	1090	272	1.73:1	3.46:1	28.82	29.98		
K-7745	N-6745	*30,000 ct	30,000 ct	—	.33	.33	.11	0.5	2730	3740	—	1:1	—	30.27	32.19		
K-7750	N-6750	40,000 ct	400 ct	100	.25	.25	.11	0.5	3150	53	13	10:1	20:1	30.27	32.19		
K-7755	N-6755	40,000 ct	2000 ct	500	.25	.25	.11	0.5	3150	300	75	4.47:1	8.94:1	30.27	32.19		
K-7760	N-6760	40,000 ct	4000 ct	1000	.25	.25	.11	0.5	3150	548	137	3.16:1	6.32:1	30.27	32.19		
K-7765	N-6765	40,000 ct	20,000 ct	5000	.25	.25	.11	0.5	3150	3075	769	1.41:1	2.83:1	30.27	32.19		
K-7770	N-6770	*40,000 ct	40,000 ct	—	.25	.25	.11	0.5	3940	4350	—	1:1	—	34.33	35.90		
K-7775	N-6775	50,000 ct	200 ct	50	.2	.2	.11	0.4	4275	24	6	15.8:1	31.6:1	34.33	35.90		
K-7777	N-6777	50,000 ct	500 ct	125	.2	.2	.11	0.4	4275	60	15	0:1	20:1	34.33	35.90		
K-7778	N-6778	50,000 ct	600 ct	150	.2	.2	.11	0.4	4275	82	21	9.13:1	18.26:1	34.33	35.90		
K-7779	N-6779	50,000 ct	50,000 ct	12,500	.2	.2	.11	0.4	4500	6270	1568	1:1	2:1	34.33	35.90		
K-7780	N-6780	60,000 ct	15,000 ct	3750	.16	.16	.11	0.4	5960	1650	412	2:1	4:1	37.76	38.87		
K-7785	N-6785	62,500 ct	50 ct	12.5	.16	.16	.11	0.4	5960	6	1.5	35.4:1	70.7:1	37.76	38.87		
K-7787	N-6787	80,000 ct	15,000 ct	3750	.12	.12	.11	0.3	7200	1690	423	2.3:1	4.6:1	37.76	38.87		
K-7789	N-6789	80,000 ct	80,000 ct	20,000	.12	.12	.11	0.3	7200	9920	2480	1:1	2:1	37.76	38.87		
K-7790	N-6790	90,000 ct	10,000 ct	2500	.11	.11	.11	0.3	7500	1350	338	3:1	6:1	42.36	40.64		
K-7795	N-6795	95,000 ct	15,000 ct	3750	.1	.1	.10	0.3	9550	1635	410	2.5:1	5:1	42.36	40.64		
K-7800	N-6800	100,000 ct	60 ct	15	.1	.1	.10	0.3	10,000	8.5	2.2	40.8:1	81.6:1	42.36	40.64		
K-7805	N-6805	100,000 ct	100 ct	25	.1	.1	.10	0.3	10,000	14	3.5	31.6:1	63.2:1	42.36	40.64		
K-7810	N-6810	100,000 ct	500 ct	125	.1	.1	.10	0.3	10,000	62	15.5	14.1:1	28.3:1	42.36	40.64		
K-7813	N-6813	100,000ct	1000 ct	250	.1	.1	.10	0.3	10,000	140	35	10:1	20:1	42.36	40.64		
K-7814	N-6814	100,000 ct	2000 ct	500	.1	.1	.10	0.3	10,000	248	62	7.07:1	14.14:1	42.36	40.64		
K-7815	N-6815	100,000 ct	10,000 ct	2500	.1	.1	.10	0.3	10,000	1075	270	3.16:1	6.32:1	42.36	40.64		
K-7820	N-6820	135,000 ct	82 ct	20.5	.074	.074	.074	0.25	13,700	9.5	2.4	40.6:1	81.2:1	41.26	42.51		
K-7823	N-6823	200,000 ct	500 ct	125	.05	.05	.05	0.2	1								



## SURFACE MOUNT

PICO surface mount units utilize materials and methods to withstand extreme temperature (220°C) of vapor phase, I.R., and other reflow procedures without degradation of electrical or mechanical characteristics.

## PICO's ultra-miniature transformers



### SPECIFICATIONS

● **MIL-T-27:** .....  
All units manufactured to MIL-T-27, and are Hermetically Sealed in a Metal Case. Audio Transformers are Type TF5R21ZZ.

● **FREQUENCY RESPONSE:** .....  
±3db, 150 Hz-75 KHz at 1.0 Milliwatt.  
(When Primary Impedance ≥ 50K Ohms, ±3 db 150 Hz to 20 KHz)

● **MAXIMUM DISTORTION:** .....  
5% With Rated Power Level at 1 KHz, 400 Hz and 150 Hz.

● **DIELECTRIC STRENGTH:** .....  
All Units Tested at 200 V RMS.

● **INSULATION RESISTANCE:** .....  
Greater Than 10,000 Megohms at 300 V DC.

● **WEIGHT:** .....  
7.5 Grams

● **OPERATING TEMPERATURE:** .....  
-55°c to +105°c (All Units Can be Supplied to Class S Requirements, +130°c).

● **TERMINALS:** .....  
Copper Clad Steel, Tin Dipped.  
Solderability per MIL-STD-202 Method 208.

● **THERMAL SHOCK:** .....  
25 Cycles, Method 107C, MIL-STD-202D, Test Condition A-1.

Delivery—  
stock to one week

**PICO  
Electronics,  
Inc.**

453 N. MacQuesten Pkwy.  
Mt. Vernon, N.Y. 10552

914-699-5514

FAX 914-699-5565

PICO PART NUMBER	PRIMARY IMPEDANCE OHMS	SECONDARY IMPEDANCE OHMS SPLIT WINDINGS		POWER WATTS			PRIMARY UNBALANCED DC CURRENT ma	PRIMARY DC RESISTANCE OHMS	SECONDARY DC RESISTANCE OHMS		TURNS RATIO PRIM/SEC		*** PRICE 1-9
		SER	PAR	1KHz and higher	400 Hz and higher	150 Hz and higher			SER CONN	PAR CONN	SEC SER CONN	SEC PAR CONN	
77203	20 ct	8 ct	2	1.0	.75	.11	22.0	1.75	1.0	.25	1.58:1	3.16:1	26.69
77205	20 ct	20 ct	5	1.0	.75	.11	22.0	1.75	2.5	.63	1:1	2:1	26.69
77210	32 ct	32 ct	8	1.0	.75	.11	18.0	2.7	3.7	.93	1:1	2:1	26.69
77215	40 ct	40 ct	10	1.0	.75	.11	16.0	3	5.2	1.3	1:1	2:1	26.69
77218	48 ct	16ct	4	1.0	.75	.11	13.0	4.5	2.4	.6	1.73:1	3.46:1	26.69
77220	50 ct	50 ct	12.5	1.0	.75	.11	13.0	4.5	6.2	1.6	1:1	2:1	26.69
77225	80 ct	32 ct	8	1.0	.75	.11	11.0	6.6	3.7	.93	1.58:1	3.16:1	26.69
77228	100 ct	40 ct	10	1.0	.75	.11	10.0	9.7	5.6	1.4	1.58:1	3.16:1	26.69
77230	100 ct	100 ct	25	1.0	.75	.11	10.0	9.7	11	2.8	1:1	2:1	26.69
77235	120 ct	12.8 ct	3.2	1.0	.75	.11	9.0	10.8	1.6	.4	3.06:1	6.12:1	26.69
77240	120 ct	60 ct	15	1.0	.75	.11	9.0	10.8	8.5	2.2	1.41:1	2.83:1	26.69
77245	120 ct	120 ct	30	1.0	.75	.11	9.0	10.8	15	3.8	1:1	2:1	26.69
77250	150 ct	12 ct	3	1.0	.75	.11	8.0	13.5	1.75	.44	3.54:1	7.08:1	26.69
77255	150 ct	50 ct	12.5	1.0	.75	.11	8.0	12	5.8	1.5	1.73:1	3.46:1	26.69
77260	150 ct	100 ct	25	1.0	.75	.11	8.0	12	13	3.3	1.22:1	2.44:1	26.69
77265	150 ct	150 ct	37.5	1.0	.75	.11	8.0	12	20	5	1:1	2:1	26.69
77270	150 ct	600 ct	150	1.0	.75	.11	8.0	12	82	20.5	1.2	1:1	26.69
77275	200 ct	200 ct	50	1.0	.75	.11	7.0	17	24	6.0	1:1	2:1	26.69
77280	300 ct	12 ct	3	1.0	.75	.11	5.0	30	1.75	.44	5:1	10:1	26.69
77285	300 ct	50 ct	12.5	1.0	.75	.11	5.0	27	6.2	1.6	2.45:1	4.9:1	26.69
77290	300 ct	150 ct	37.5	1.0	.75	.11	5.0	26	21	5.3	1.41:1	2.83:1	26.69
77295	300 ct	300 ct	75	1.0	.75	.11	5.0	27	38	9.5	1:1	2:1	26.69
77300	300 ct	600 ct	150	1.0	.75	.11	5.0	27	66	17	1.41:1	1.41:1	26.69
77305	320 ct	12.8 ct	3.2	1.0	.75	.11	5.0	30	1.75	.44	5:1	10:1	26.69
77310	400 ct	40 ct	10	1.0	.75	.11	5.0	39	4.3	1.1	3.16:1	6.32:1	26.69
77315	400 ct	120 ct	30	1.0	.75	.11	5.0	30	14	3.5	1.83:1	3.65:1	26.69
77320	400 ct	200 ct	50	1.0	.75	.11	5.0	39	24	6	1.41:1	2.83:1	26.69
77325	400 ct	400 ct	100	1.0	.75	.11	5.0	39	42	10.5	1:1	2:1	26.69
77330	400 ct	1000 ct	250	1.0	.75	.11	5.0	39	109	28	1.158	1.26:1	26.69
77335	400 ct	2000 ct	500	1.0	.75	.11	5.0	39	198	49	1.224	1.1:12	26.69
77340	400 ct	4000 ct	1000	1.0	.75	.11	5.0	39	436	109	1.3:16	1.1:58	26.69
77342	500 ct	12.8 ct	3.2	1.0	.75	.11	4.5	43	1.6	.4	6.25:1	12.5:1	26.69
77344	500 ct	16 ct	4	1.0	.75	.11	4.5	43	2.3	.56	5.6:1	11.2:1	26.69
77345	500 ct	50 ct	12.5	1.0	.75	.11	4.5	43	5.8	1.5	3.16:1	6.32:1	26.69
77347	500 ct	150 ct	37.5	1.0	.75	.11	4.5	43	19.8	5	1.83:1	3.65:1	26.69
77350	500 ct	500 ct	125	1.0	.75	.11	4.5	43	60	15	1:1	2:1	26.69
77355	*500 ct	500 ct	-	1.0	.75	.11	4.5	43	60	-	1:1	-	27.79
77360	500 ct	600 ct	150	1.0	.75	.11	4.5	43	66	17	1.1:1	1.83:1	26.69
77365	600 ct	12.8 ct	3.2	1.0	.75	.11	4.0	68	1.75	.44	6.85:1	13.7:1	26.69
77367	600 ct	30 ct	7.5	1.0	.75	.11	4.0	60	3.7	.93	4.47:1	8.94:1	26.69
77370	600 ct	48 ct	12	1.0	.75	.11	4.0	60	5.9	1.5	3.54:1	7.07:1	26.69
77375	600 ct	200 ct	50	1.0	.75	.11	4.0	60	25	6.3	1.73:1	3.46:1	26.69
77380	600 ct	600 ct	150	1.0	.75	.11	4.0	60	66	17	1:1	2:1	26.69
77385	*600 ct	600 ct	-	1.0	.75	.11	4.0	60	68	-	1:1	-	27.79
77386	*600 ct	900 ct	-	1.0	.75	.11	4.0	60	104	-	1:1.22	-	27.79
77387	600 ct	1200 ct	300	1.0	.75	.11	4.0	60	116	29	1.1:41	1.41:1	26.69
77390	640 ct	12.8 ct	3.2	1.0	.75	.11	4.0	69	1.75	.44	7.07:1	14.14:1	26.69
77395	700 ct	100 ct	25	1.0	.75	.11	4.0	62	10.6	2.7	2.65:1	5.29:1	26.69
77400	800 ct	12.8 ct	3.2	1.0	.75	.11	3.5	78	1.75	.44	7.91:1	15.8:1	26.69
77405	800 ct	48 ct	12	1.0	.75	.11	3.5	74	6	1.5	4.08:1	8.16:1	26.69
77410	800 ct	800 ct	200	1.0	.75	.11	3.5	74	102	26	1:1	2:1	26.69
77415	900 ct	600 ct	150	1.0	.75	.11	3.0	90	66	17	1.23:1	2.45:1	26.69
77417	*900 ct	900 ct	-	1.0	.75	.11	3.0	90	102	-	1:1	-	27.79
77420	1000 ct	12 ct	3	1.0	.75	.11	3.0	115	1.75	.44	9.13:1	18.26:1	26.69
77425	1000 ct	50 ct	12.5	1.0	.75	.11	3.0	100	5.8	1.5	4.47:1	8.94:1	26.69
77430	1000 ct	1000 ct	250	1.0	.75	.11	3.0	75	103	26	1:1	2:1	26.69
77435	1060 ct	12.8 ct	3.2	1.0	.75	.11	3.0	115	1.75	.44	9.1:1	18.2:1	26.69
77440	1200 ct	12.8 ct	3.2	1.0	.75	.11	3.0	122	1.75	.44	9.68:1	19.4:1	26.69
77445	1200 ct	500 ct	125	1.0	.75	.11	3.0	113	63	16	1.55:1	3.1:1	26.69
77450	1200 ct	1200 ct	300	1.0	.75	.11	3.0	113	155	39	1:1	2:1	26.69
77455	*1200 ct	1200 ct	-	1.0	.75	.11	3.0	109	150	-	1:1	-	27.79
77460	1500 ct	12 ct	3	1.0	.75	.11	2.5	140	1.75	.44	11.18:1	22.36:1	26.69
77465	1500 ct	500 ct	125	1.0	.75	.11	2.5	150	60	15	1.73:1	3.46:1	26.69
77470	*1500 ct	600 ct	-	1.0	.75	.11	2.5	150	66	-	1.58:1	-	27.79
77475	*1500 ct	1500 ct	-	1.0	.75	.11	2.5	150	168	-	1:1	-	27.79
77480	1600 ct	12.8 ct	3.2	1.0	.75	.11	2.5	140	1.75	.44	11.18:1	22.36:1	26.69
77483	2000 ct	8 ct	2	1.0	.75	.11	2.0	250	1.0	.25	15.8:1	31.6:1	26.69
77485	2000 ct	2000 ct	500	1.0	.75	.11	2.0	185	255	64	1:1	2:1	26.69
77490	*2000 ct	2000 ct	-	1.0	.75	.11	2.0	175	240	-	1:1	-	27.79
77495	2000 ct	8000 ct	2000	1.0	.75	.11	2.0	185	1015	254	1.2	1:1	26.69
77497	2500 ct	2500 ct	625	1.0	.75	.11	2.0	245	268	68	1:1	2:1	26.69
77500	3000 ct	3000 ct	750	1.0	.75	.11	1.8	267	295	74	1:1	2:1	26.69
77505	*3000ct	3000 ct	-	1.0	.75	.11	1.8	267	368	-	1:1	-	27.79
77510	3600 ct	3600 ct	900	1.0	.75	.11	1.5	300	413	103	1:1	2:1	26.69
77512	4000 ct	16 ct	4	1.0	.75	.11	1.5	395	2.5	.65	15.8:1	31.6:1	26.69
77514	4000 ct	600 ct	150	1.0	.75	.11	1.5	395	66	17	2.58:1	5.16:1	26.69

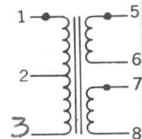
\*\*\*Discount Prices: 1-9 Net; 10-24 less 10%; 25-49 less 16%; 50-99 less 23%; 100-499 less 30%  
Ordering Instructions: No minimum. Net 30 days F.O.B. Mt. Vernon, New York.

\*INCLUDES ELECTROSTATIC SHIELD

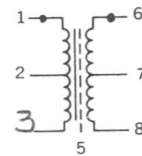
For immediate engineering assistance or to place an order—Call Toll Free 800-431-1064

**SURFACE MOUNT**  
PICO surface mount units utilize materials and methods to withstand extreme temperature (220°C) of vapor phase, I.R., and other reflow procedures without degradation of electrical or mechanical characteristics.

**SURFACE MOUNT SCHEMATIC FOR TRANSFORMERS WITH SPLIT WINDING**



**SCHEMATIC FOR TRANSFORMERS WITH ELECTROSTATIC SHIELD**



**FEATURES**

- EXTREME RESISTANCE TO THERMAL SHOCK
- ULTRA MINIATURE SIZE
- PICO IS APPROVED QPL SOURCE (MIL-T-27)
- MAGNETIC SHIELDS AVAILABLE
- ELECTROSTATIC SHIELDING CAN BE ADDED.
- VARIATION OF STANDARD DESIGNS AVAILABLE
- PRIMARY AND SECONDARY WINDINGS CAN BE USED EITHER AS INPUT OR OUTPUT.
- SPECIAL PRODUCTION TECHNIQUES ENSURE UNIFORM SIZE AND LEADS WHICH ARE FREE OF ENCAPSULANT. NO MENISCUS IN LEAD AREA.
- EVERY UNIT IN THIS CATALOG CAN BE MADE WITH A 300 THERMAL CYCLE GUARANTEE USING PICO'S SPECIAL SR CONSTRUCTION. CONTACT FACTORY FOR DETAILS.

**Delivery—  
stock to one week**

**PICO  
Electronics,  
Inc.**

453 N. MacQuesten Pkwy.  
Mt. Vernon, N.Y. 10552

914-699-5514

FAX 914-699-5565

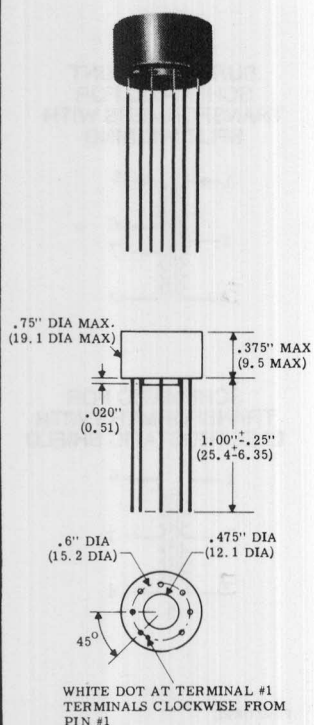
PICO PART NUMBER	PRIMARY IMPEDANCE OHMS	SECONDARY IMPEDANCE OHMS SPLIT WINDINGS		POWER WATTS			PRIMARY UNBALANCED DC CURRENT ma	PRIMARY DC RESISTANCE OHMS	SECONDARY DC RESISTANCE OHMS		TURNS RATIO PRIM/SEC		*** PRICE 1-9
		SER	PAR	1KHz and higher	400 Hz and higher	150 Hz and higher			SER CONN	PAR CONN	SEC SER CONN	SEC PAR CONN	
77515	4000 ct	1000 ct	250	1.0	.75	.11	1.5	395	108	27	2.1	4.1	26.69
77520	*4000 ct	8000 ct	—	1.0	.75	.11	1.5	390	955	—	1.1:4.1	—	27.79
77525	5000 ct	500 ct	125	1.0	.75	.11	1.3	450	62	16	3.16:1	6.32:1	26.69
77530	5000 ct	5000 ct	1250	1.0	.75	.11	1.3	450	620	155	1:1	2:1	26.69
77535	7500 ct	50 ct	12.5	1.0	.75	.11	1.0	670	6	1.5	12.25:1	24.5:1	29.62
77540	7500 ct	100 ct	25	1.0	.75	.11	1.0	670	11	2.8	8.66:1	17.32:1	29.62
77545	7500 ct	600 ct	150	1.0	.75	.11	1.0	670	66	16.5	3.54:1	7.07:1	29.62
77550	7500 ct	2500 ct	625	1.0	.75	.11	1.0	670	268	67	1.73:1	3.46:1	29.62
77555	*7500 ct	7500 ct	—	1.0	.75	.11	1.0	670	925	—	1:1	—	32.66
77560	8000 ct	12.8 ct	3.2	1.0	.75	.11	1.0	695	1.75	.44	25:1	50:1	29.62
77565	8000 ct	1000 ct	250	1.0	.75	.11	1.0	695	106	26.5	2.83:1	5.66:1	29.62
77570	*8000 ct	1200 ct	—	1.0	.75	.11	1.0	715	153	—	2.58:1	—	32.66
77575	*9000 ct	9000 ct	—	1.0	.75	.11	1.0	925	1020	—	1:1	—	32.66
77580	10,000 ct	12.8 ct	3.2	1.0	.75	.11	1.0	768	1.6	.4	28:1	56:1	29.62
77585	10,000 ct	16 ct	4	1.0	.75	.11	1.0	756	1.7	.43	25:1	50:1	29.62
77590	10,000 ct	100 ct	25	1.0	.75	.11	1.0	780	10	2.5	10:1	20:1	29.62
77595	10,000 ct	200 ct	50	1.0	.75	.11	1.0	780	24	6	7.07:1	14.14:1	29.62
77600	10,000 ct	500 ct	125	1.0	.75	.11	1.0	780	60	15	4.47:1	8.94:1	29.62
77605	10,000 ct	600 ct	150	1.0	.75	.11	1.0	780	83	21	4.08:1	8.16:1	29.62
77610	10,000 ct	1000 ct	250	1.0	.75	.11	1.0	780	106	27	3.16:1	6.32:1	29.62
77615	10,000 ct	1200 ct	300	1.0	.75	.11	1.0	780	145	36	2.89:1	5.77:1	29.62
77620	10,000 ct	1500 ct	375	1.0	.75	.11	1.0	780	160	40	2.58:1	5.16:1	29.62
77625	10,000 ct	2000 ct	500	1.0	.75	.11	1.0	780	300	75	2.24:1	4.47:1	29.62
77630	10,000 ct	5000 ct	1250	1.0	.75	.11	1.0	780	610	153	1.41:1	2.83:1	29.62
77635	10,000 ct	7500 ct	1875	1.0	.75	.11	1.0	780	932	233	1.16:1	2.31:1	29.62
77640	10,000 ct	10,000 ct	2500	1.0	.75	.11	1.0	780	1075	269	1:1	2:1	29.62
77645	*10,000 ct	10,000 ct	—	1.0	.75	.11	1.0	715	985	—	1:1	—	32.66
77650	15,000 ct	400 ct	100	.66	.66	.11	0.8	1165	52	13	6.12:1	12.25:1	29.62
77652	15,000 ct	500 ct	125	.66	.66	.11	0.8	1165	60	15	5.48:1	10.95:1	29.62
77655	15,000 ct	600 ct	150	.66	.66	.11	0.8	1165	80	20	5:1	10:1	29.62
77660	15,000 ct	10,000 ct	2500	.66	.66	.11	0.8	1165	1050	263	1.22:1	2.45:1	29.62
77665	*15,000 ct	15,000 ct	—	.66	.66	.11	0.8	1165	1600	—	1:1	—	32.66
77670	15,000 ct	15,000 ct	3750	.66	.66	.11	0.8	1165	1600	400	1:1	2:1	29.62
77675	16,000 ct	1000 ct	250	.62	.62	.11	0.8	1560	108	27	4:1	8:1	29.62
77680	20,000 ct	500 ct	125	.5	.5	.11	0.7	1750	60	15	6.32:1	12.65:1	29.62
77685	20,000 ct	600 ct	150	.5	.5	.11	0.7	1750	82	20.5	5.77:1	11.55:1	32.66
77690	20,000 ct	800 ct	200	.5	.5	.11	0.7	1750	98	24.5	5:1	10:1	32.66
77695	20,000 ct	1000 ct	250	.5	.5	.11	0.7	1750	135	34	4.47:1	8.94:1	32.66
77700	20,000 ct	5000 ct	1250	.5	.5	.11	0.7	1750	610	153	2:1	4:1	32.66
77705	20,000 ct	10,000 ct	2500	.5	.5	.11	0.7	1750	1075	269	1.41:1	2.83:1	32.66
77710	*20,000 ct	20,000 ct	—	.5	.5	.11	0.7	1715	2370	—	1:1	—	32.66
77715	25,000 ct	500 ct	125	.4	.4	.11	0.6	2470	60	15	7.07:1	14.14:1	32.98
77720	25,000 ct	1000 ct	250	.4	.4	.11	0.6	2470	106	27	5:1	10:1	32.66
77725	30,000 ct	50 ct	12.5	.33	.33	.11	0.5	2730	6.2	1.6	24.5:1	49:1	32.66
77730	30,000 ct	1200 ct	300	.33	.33	.11	0.5	2815	156	39	5:1	10:1	32.98
77732	30,000 ct	500 ct	125	.33	.33	.11	0.5	2730	61	15.3	7.7:1	15.5:1	32.98
77734	30,000 ct	200 ct	50	.33	.33	.11	0.5	2730	24	6	12.2:1	24.5:1	32.98
77735	30,000 ct	5000 ct	1250	.33	.33	.11	0.5	2730	620	155	2.45:1	4.9:1	32.98
77740	30,000 ct	10,000 ct	2500	.33	.33	.11	0.5	2730	1090	272	1.73:1	3.46:1	32.98
77745	*30,000 ct	30,000 ct	—	.33	.33	.11	0.5	2730	3740	—	1:1	—	35.41
77750	40,000 ct	400 ct	100	.25	.25	.11	0.5	3150	53	13	10:1	20:1	35.41
77755	40,000 ct	2000 ct	500	.25	.25	.11	0.5	3150	300	75	4.47:1	8.94:1	35.41
77760	40,000 ct	4000 ct	1000	.25	.25	.11	0.5	3150	548	137	3.16:1	6.32:1	35.41
77765	40,000 ct	20,000 ct	5000	.25	.25	.11	0.5	3150	3075	769	1.41:1	2.83:1	35.41
77770	*40,000 ct	40,000 ct	—	.25	.25	.11	0.5	3940	4350	—	1:1	—	39.49
77775	50,000 ct	200 ct	50	.2	.2	.11	0.4	4275	24	6	15.8:1	31.6:1	39.49
77777	50,000 ct	500 ct	125	.2	.2	.11	0.4	4275	60	15	0:1	20:1	39.49
77778	50,000 ct	600 ct	150	.2	.2	.11	0.4	4275	82	21	9.13:1	18.26:1	39.49
77779	50,000 ct	50,000 ct	12,500	.2	.2	.11	0.4	4500	6270	1568	1:1	2:1	39.49
77780	60,000 ct	15,000 ct	3750	.16	.16	.11	0.4	5960	1650	412	2:1	4:1	42.76
77785	62,500 ct	50 ct	12.5	.16	.16	.11	0.4	5960	6	1.5	35.4:1	70.7:1	42.76
77787	80,000 ct	15,000 ct	3750	.12	.12	.11	0.3	7200	1690	423	2.3:1	4.6:1	42.76
77789	80,000 ct	80,000 ct	20,000	.12	.12	.11	0.3	7200	9920	2480	1:1	2:1	42.76
77790	90,000 ct	10,000 ct	2500	.11	.11	.11	0.3	7500	1350	338	3:1	6:1	44.70
77795	95,000 ct	15,000 ct	3750	.1	.1	.10	0.3	9550	1635	410	2.5:1	5:1	44.70
77800	100,000 ct	60 ct	15	.1	.1	.10	0.3	10,000	8.5	2.2	40.8:1	81.6:1	44.70
77805	100,000 ct	100 ct	25	.1	.1	.10	0.3	10,000	14	3.5	31.6:1	63.2:1	44.70
77810	100,000 ct	500 ct	125	.1	.1	.10	0.3	10,000	62	15.5	14.1:1	28.3:1	44.70
77813	100,000 ct	1000 ct	250	.1	.1	.10	0.3	10,000	140	35	10:1	20:1	44.70
77814	100,000 ct	2000 ct	500	.1	.1	.10	0.3	10,000	248	62	7.07:1	14.14:1	44.70
77815	100,000 ct	10,000 ct	2500	.1	.1	.10	0.3	10,000	1075	270	3.16:1	6.32:1	44.70
77820	135,000 ct	82 ct	20.5	.074	.074	.074	0.25	13,700	9.5	2.4	40.6:1	81.2:1	46.76
77823	200,000 ct	500 ct	125	.05	.05	.05	0.2	17,340	75	19	20:1	40:1	46.76
77825	200,000 ct	1000 ct	250	.05	.05	.05	0.2	17,340	133	33	14.1:1	28.3:1	46.76
77830	200,000 ct	10,000 ct	2500	.05	.05	.05	0.2	17,340	1350	336	4.47:1	8.94:1	46.76
77835	200,000 ct	20,000 ct	5000	.05	.05	.05	0.2	17,340	3000	750	3.16:1	6.32:1	47.94
77837	250,000 ct	200 ct	50	.04	.04	.04	0.2	17,340	28	7	35.4:1	70.7:1	47.94
77840	250,000 ct	1000 ct	250	.04	.04	.04	0.2	17,340	118	30	15.8:1	31.6:1	47.94

\*\*\*Discount Prices: 1-9 Net; 10-24 less 10%; 25-49 less 16%; 50-99 less 23%; 100-499 less 30% \*INCLUDES ELECTROSTATIC SHIELD  
Ordering Instructions: No minimum. Net 30 days F.O.B. Mt. Vernon, New York.

For immediate engineering assistance or to place an order—Call Toll Free 800-431-1064

# PICO's ultra-miniature transformers

## R SERIES Plug-In



Dimensions are in inches (MM)

### SPECIFICATIONS

- **MIL-T-27:**.....  
All units manufactured to MIL-T-27, and are Hermetically Sealed in a Metal Case. Audio Transformers are Type TF5R21ZZ.
- **FREQUENCY RESPONSE:**.....  
±3db, 75 Hz-30 KHz at 1.0 Milliwatt.
- **MAXIMUM DISTORTION:**.....  
5% With Rated Power Level at 1 KHz, 300 KHz and 75 Hz.
- **DIELECTRIC STRENGTH:**.....  
All Units Tested at 200 V RMS.
- **INSULATION RESISTANCE:**...  
Greater Than 10,000 Megohms at 300 V DC.
- **WEIGHT:**.....  
12 Grams
- **OPERATING TEMPERATURE:**...  
-55°c to +105°c (All Units Can be Supplied to Class S Requirements, +130°c maximum).
- **TERMINALS:**.....  
Solid .016 Diameter Conductor.  
Conductor is Copper Clad Steel.  
Tinned 100%. Electroplated Per Mil-T-10727A and ASTM CCS B452.
- **THERMAL SHOCK:**.....  
25 Cycles, Method 107C, MIL-STD-202D, Test Condition A-1.

THIS PRODUCT IS PATENTED

**Delivery—  
stock to one week**

PICO PART NUMBER		SECONDARY IMPEDANCE OHMS SPLIT WINDINGS		POWER WATTS			PRIMARY UNBAL DC CURRENT ma	PRIMARY DC RESIST OHMS	SECONDARY DC RESISTANCE OHMS		TURNS RATIO PRIME/SEC		PICO PRICES 1-9 ***
R-Series Plug-In	PRIMARY IMPEDANCE OHMS	SER	PAR	1KHz and higher	300 Hz and higher	75 Hz and higher			SER CONN	PAR CONN	SEC SER CONN	SEC PAR CONN	R-Series
R-20003	20 ct	8 ct	2	1.5	.9	.03	22	1.6	.76	.19	1.58:1	3.16:1	32.63
R-20005	20 ct	20 ct	5	1.5	.9	.03	22	1.6	1.9	.48	1:1	2:1	32.63
R-20010	32 ct	32 ct	8	1.5	.9	.03	17.5	2.56	3	.75	1:1	2:1	32.63
R-20015	40 ct	40 ct	10	1.5	.9	.03	16	3.2	3.8	.95	1:1	2:1	32.63
R-20018	48 ct	16 ct	4	1.5	.9	.03	14.5	3.84	1.52	.38	1.73:1	3.46:1	32.63
R-20020	50 ct	50 ct	12.5	1.5	.9	.03	14	4	4.75	1.19	1:1	2:1	32.63
R-20025	80 ct	32 ct	8	1.5	.9	.03	11	6.4	3	.75	1.58:1	3.16:1	32.63
R-20028	100 ct	40 ct	10	1.5	.9	.03	10	8	3.8	.95	1.58:1	3.16:1	32.63
R-20030	100 ct	100 ct	25	1.5	.9	.03	10	8	9.5	2.38	1:1	2:1	32.63
R-20035	120 ct	12.8 ct	3.2	1.5	.9	.03	9	9.6	1.22	.3	3.06:1	6.12:1	32.63
R-20040	120 ct	60 ct	15	1.5	.9	.03	9	9.6	5.7	1.4	1.41:1	2.83:1	32.63
R-20045	120 ct	120 ct	30	1.5	.9	.03	9	9.6	11.4	2.85	1:1	2:1	32.63
R-20050	150 ct	12 ct	3	1.5	.9	.03	8	12	1.14	.29	3.54:1	7.08:1	32.63
R-20055	150 ct	50 ct	12.5	1.5	.9	.03	8	12	4.75	1.19	1.73:1	3.46:1	32.63
R-20060	150 ct	100 ct	25	1.5	.9	.03	8	12	9.5	2.38	1.22:1	2.44:1	32.63
R-20065	150 ct	150 ct	37.5	1.5	.9	.03	8	12	14.3	3.56	1:1	2:1	32.63
R-20070	150 ct	600 ct	150	1.5	.9	.03	8	12	57	14.3	1.2	1:1	32.63
R-20075	200 ct	200 ct	50	1.5	.9	.03	7	16	19	4.75	1:1	2:1	32.63
R-20080	300 ct	12 ct	3	1.5	.9	.03	5.5	24	1.14	.29	5:1	10:1	32.63
R-20085	300 ct	50 ct	12.5	1.5	.9	.03	5.5	24	4.75	1.19	2.45:1	4.9:1	32.63
R-20090	300 ct	150 ct	37.5	1.5	.9	.03	5.5	24	14.25	3.56	1.41:1	2.83:1	32.63
R-20095	300 ct	300 ct	75	1.5	.9	.03	5.5	24	28.5	7.13	1:1	2:1	32.63
R-20100	300 ct	600 ct	150	1.5	.9	.03	5.5	24	57	14.25	1.14:1	1.41:1	32.63
R-20105	320 ct	12.8 ct	3.2	1.5	.9	.03	5.5	25.6	1.22	.3	5:1	10:1	32.63
R-20110	400 ct	40 ct	10	1.5	.9	.03	5	32	3.8	.95	3.16:1	6.32:1	32.63
R-20115	400 ct	120 ct	30	1.5	.9	.03	5	32	11.4	2.85	1.83:1	3.65:1	32.63
R-20120	400 ct	200 ct	50	1.5	.9	.03	5	32	19	4.75	1.41:1	2.83:1	32.63
R-20125	400 ct	400 ct	100	1.5	.9	.03	5	32	38	9.5	1:1	2:1	32.63
R-20130	400 ct	1000 ct	250	1.5	.9	.03	5	32	95	23.8	1.158	1.26:1	32.63
R-20135	400 ct	2000 ct	500	1.5	.9	.03	5	32	190	47.5	1.24:1	1.1:12	32.63
R-20140	400 ct	4000 ct	1000	1.5	.9	.03	5	32	380	95	1.3:16	1.1:58	32.63
R-20142	500 ct	12.8 ct	3.2	1.5	.9	.03	4.5	40	1.22	.3	6.25:1	12.5:1	32.63
R-20144	500 ct	16 ct	4	1.5	.9	.03	4.5	40	1.52	.38	5.6:1	11.2:1	32.63
R-20145	500 ct	50 ct	12.5	1.5	.9	.03	4.5	40	4.75	1.19	3.16:1	6.32:1	32.63
R-20147	500 ct	150 ct	37.5	1.5	.9	.03	4.5	40	14.25	3.56	1.83:1	3.65:1	32.63
R-20150	500 ct	500 ct	125	1.5	.9	.03	4.5	40	47.5	11.88	1:1	2:1	32.63
R-20155	*500 ct	500 ct	—	1.5	.9	.03	4.5	40	47.5	—	1:1	—	33.98
R-20160	500 ct	600 ct	150	1.5	.9	.03	4.5	40	57	14.25	1.1:1	1.83:1	32.63
R-20165	600 ct	12.8 ct	3.2	1.5	.9	.03	4	48	1.22	.3	6.85:1	13.7	28.50
R-20167	600 ct	30 ct	7.5	1.5	.9	.03	4	48	2.85	.71	4.47:1	8.94:1	28.50
R-20170	600 ct	48 ct	12	1.5	.9	.03	4	48	4.56	1.14	3.54:1	7.07:1	28.50
R-20175	600 ct	200 ct	50	1.5	.9	.03	4	48	19	4.75	1.73:1	3.46:1	28.50
R-20180**	600 ct	600 ct	150	1.5	.9	.03	4	48	57	14.25	1:1	2:1	32.63
R-20185**	*600 ct	600 ct	—	1.5	.9	.03	4	48	57	—	1:1	—	29.68
R-20186**	*600 ct	900 ct	—	1.5	.9	.03	4	48	85.5	—	1:1.22	—	29.68
R-20187**	600 ct	1200 ct	300	1.5	.9	.03	4	48	114	28.5	1.14:1	1.41:1	28.50
R-20190	640 ct	12.8 ct	3.2	1.5	.9	.03	4	51.2	1.22	.3	7.07:1	14.14:1	28.50
R-20195	700 ct	100 ct	25	1.5	.9	.03	3.5	56	9.5	2.38	2.65:1	5.29:1	28.50
R-20200	800 ct	12.8 ct	3.2	1.5	.9	.03	3.5	64	1.22	.3	7.91:1	15.8:1	28.50
R-20205	800 ct	48 ct	12	1.5	.9	.03	3.5	64	4.56	1.14	4.08:1	8.16:1	28.50
R-20210	800 ct	800 ct	200	1.5	.9	.03	3.5	64	76	19	1:1	2:1	28.50
R-20215	900 ct	600 ct	150	1.5	.9	.03	3	72	57	14.3	1.23:1	2.45:1	28.50
R-20217**	*900 ct	900 ct	—	1.5	.9	.03	3	72	85.5	—	1:1	—	29.68
R-20220	1000 ct	12 ct	3	1.5	.9	.03	3	80	1.14	.29	9.13:1	18.26:1	28.50
R-20225	1000 ct	50 ct	12.5	1.5	.9	.03	3	80	4.75	1.19	4.47:1	8.94:1	28.50
R-20230	1000 ct	1000 ct	250	1.5	.9	.03	3	80	95	23.8	1:1	2:1	28.50
R-20235	1060 ct	12.8 ct	3.2	1.5	.9	.03	3	85	1.22	.3	9.1:1	18.2:1	28.50
R-20240	1200 ct	12.8 ct	3.2	1.5	.9	.03	3	96	1.22	.3	9.68:1	19.4:1	28.50
R-20245	1200 ct	500 ct	125	1.5	.9	.03	3	96	47.5	11.88	1.55:1	3.1:1	28.50
R-20250	1200 ct	1200 ct	300	1.5	.9	.03	3	96	114	28.5	1:1	2:1	28.50
R-20255	*1200 ct	1200 ct	—	1.5	.9	.03	3	96	114	—	1:1	—	29.68
R-20260	1500 ct	12 ct	3	1.5	.9	.03	2.5	120	1.14	.29	11.18:1	22.36:1	28.50
R-20265	1500 ct	500 ct	125	1.5	.9	.03	2.5	120	47.5	11.88	1.73:1	3.46:1	28.50
R-20270	*1500 ct	600 ct	—	1.5	.9	.03	2.5	120	57	—	1.58:1	—	29.68
R-20275	*1500 ct	1500 ct	—	1.5	.9	.03	2.5	120	142	—	1:1	—	29.68
R-20280	1600 ct	12.8 ct	3.2	1.5	.9	.03	2.5	128	1.22	.3	11.18:1	22.36:1	28.50
R-20283	2000 ct	8 ct	2	1.5	.9	.03	2.2	160	.76	.19	15.8:1	31.6:1	28.50
R-20285	2000 ct	2000 ct	500	1.5	.9	.03	2.2	160	190	47.5	1:1	2:1	28.50
R-20290	*2000 ct	2000 ct	—	1.5	.9	.03	2.2	160	190	—	1:1	—	29.68
R-20295	2000 ct	8000 ct	2000	1.5	.9	.03	2.2	160	760	190	1:2	1:1	28.50
R-20297	2500 ct	2500 ct	625	1.5	.9	.03	2	200	238	59.5	1:1	2:1	28.50
R-20300	3000 ct	3000 ct	750	1.5	.9	.03	1.8	240	285	71.3	1:1	2:1	28.50
R-20305	*3000 ct	3000 ct	—	1.5	.9	.03	1.8	240	285	—	1:1	—	29.68

\*INCLUDES ELECTROSTATIC SHIELD

\*\*MINIATURIZED TELEPHONE COUPLING APPLICATION

\*\*\*Discount Prices: 1-9 Net; 10-24 less 10%; 25-49 less 16%; 50-99 less 23%; 100-499 less 30%

Ordering Instructions: No minimum. Net 30 days F.O.B. Mt. Vernon, New York.

For immediate engineering assistance or to place an order—Call Toll Free 800-431-1064



PICO PART NUMBER	PRIMARY IMPEDANCE OHMS	SECONDARY IMPEDANCE OHMS SPLIT WINDINGS		POWER WATTS			PRIMARY UNBAL DC CURRENT ma	PRIMARY DC RESIST OHMS	SECONDARY DC RESISTANCE OHMS		TURNS RATIO PRIME/SEC		PICO PRICES 1-9 ***
		SER	PAR	1KHz and higher	300 Hz and higher	75 Hz and higher			SER CONN	PAR CONN	SEC SER CONN	SEC PAR CONN	
R-20310	3600 ct	3600 ct	900	1.5	.9	.03	1.7	288	342	86	1:1	2:1	32.63
R-20312	4000 ct	16 ct	4	1.5	.9	.03	1.6	320	152	.38	15.8:1	31.6:1	32.63
R-20314**	4000 ct	600 ct	150	1.5	.9	.03	1.6	320	57	14.3	2.58:1	5.16:1	32.63
R-20315	4000 ct	1000 ct	250	1.5	.9	.03	1.6	320	95	23.8	2:1	4:1	32.63
R-20320	*4000 ct	8000 ct	-	1.5	.9	.03	1.6	320	760	-	1:1.41	-	33.98
R-20325	5000 ct	500 ct	125	1.5	.9	.03	1.4	400	47.5	11.88	3.16:1	6.32:1	32.63
R-20330	5000 ct	5000 ct	1250	1.5	.9	.03	1.4	400	475	119	1:1	2:1	32.63
R-20335	7500 ct	50 ct	12.5	1.3	.9	.03	1.2	600	4.75	1.19	12.25:1	24.5:1	36.34
R-20340	7500 ct	100 ct	25	1.3	.9	.03	1.2	600	9.5	2.38	8.66:1	17.32:1	36.34
R-20345	7500 ct	600 ct	150	1.3	.9	.03	1.2	600	57	14.3	3.54:1	7.07:1	36.34
R-20350	7500 ct	2500 ct	625	1.3	.9	.03	1.2	600	238	59.5	1.73:1	3.46:1	36.34
R-20355	*7500 ct	7500 ct	-	1.3	.9	.03	1.2	600	713	-	1:1	-	38.75
R-20360	8000 ct	12.8 ct	3.2	1.2	.9	.03	1.1	640	1.22	.3	25:1	50:1	36.34
R-20365	8000 ct	1000 ct	250	1.2	.9	.03	1.1	640	95	23.8	2.83:1	5.66:1	36.34
R-20370	*8000 ct	1200 ct	-	1.2	.9	.03	1.1	640	114	-	2.58:1	-	38.75
R-20375	*9000 ct	9000 ct	-	1.1	.9	.03	1.1	720	855	-	1:1	-	38.75
R-20380	10,000 ct	12.8 ct	3.2	1.0	.9	.03	1	800	1.22	.3	28:1	56:1	36.34
R-20385	10,000 ct	16 ct	4	1.0	.9	.03	1	800	1.52	.38	25:1	50:1	36.34
R-20390	10,000 ct	100 ct	25	1.0	.9	.03	1	800	9.5	2.38	10:1	20:1	36.34
R-20395	10,000 ct	200 ct	50	1.0	.9	.03	1	800	19	4.75	7.07:1	14.14:1	36.34
R-20400	10,000 ct	500 ct	125	1.0	.9	.03	1	800	47.5	11.88	4.47:1	8.94:1	36.34
R-20405	10,000 ct	600 ct	150	1.0	.9	.03	1	800	57	14.25	4.08:1	8.16:1	36.34
R-20410	10,000 ct	1000 ct	250	1.0	.9	.03	1	800	95	23.8	3.16:1	6.32:1	36.34
R-20415	10,000 ct	1200 ct	300	1.0	.9	.03	1	800	114	28.5	2.89:1	5.77:1	36.34
R-20420	10,000 ct	1500 ct	375	1.0	.9	.03	1	800	143	35.8	2.58:1	5.16:1	36.34
R-20425	10,000 ct	2000 ct	500	1.0	.9	.03	1	800	190	47.5	2.24:1	4.47:1	36.34
R-20430	10,000 ct	5000 ct	1250	1.0	.9	.03	1	800	475	119	1.41:1	2.83:1	36.34
R-20435	10,000 ct	7500 ct	1875	1.0	.9	.03	1	800	713	178	1.16:1	2.31:1	36.34
R-20440	10,000 ct	10,000 ct	2500	1.0	.9	.03	1	800	950	238	1:1	2:1	36.34
R-20445	*10,000 ct	10,000 ct	-	1.0	.9	.03	1	800	950	-	1:1	-	38.75
R-20450	15,000 ct	400 ct	100	.66	.66	.03	.8	1200	38	9.5	6.12:1	12.25:1	36.34
R-20452	15,000 ct	500 ct	125	.66	.66	.03	.8	1200	48	12	5.48:1	10.95:1	36.34
R-20455	15,000 ct	600 ct	150	.66	.66	.03	.8	1200	57	14.3	5:1	10:1	36.34
R-20460	15,000 ct	10,000 ct	2500	.66	.66	.03	.8	1200	950	238	1.22:1	2.45:1	36.34
R-20465	*15,000 ct	15,000 ct	-	.66	.66	.03	.8	1200	1430	-	1:1	-	38.75
R-20470	15,000 ct	15,000 ct	3750	.66	.66	.03	.8	1200	1430	357	1:1	2:1	36.34
R-20475	16,000 ct	1000 ct	250	.62	.62	.03	.8	1280	95	23.8	4:1	8:1	36.34
R-20480	20,000 ct	500 ct	125	.5	.5	.03	.7	1600	47.5	11.88	6.32:1	12.65:1	38.75
R-20485	20,000 ct	600 ct	150	.5	.5	.03	.7	1600	57	14.25	5.77:1	11.55:1	38.75
R-20490	20,000 ct	800 ct	200	.5	.5	.03	.7	1600	76	19	5:1	10:1	38.75
R-20495	20,000 ct	1000 ct	250	.5	.5	.03	.7	1600	95	23.8	4.47:1	8.94:1	38.75
R-20500	20,000 ct	5000 ct	1250	.5	.5	.03	.7	1600	475	119	2:1	4:1	38.75
R-20505	20,000 ct	10,000 ct	2500	.5	.5	.03	.7	1600	950	238	1.41:1	2.83:1	38.75
R-20510	*20,000 ct	20,000 ct	-	.5	.5	.03	.7	1600	1900	-	1:1	-	40.29
R-20515	25,000 ct	500 ct	125	.4	.4	.03	.6	2000	47.5	11.88	7.07:1	14.14:1	38.75
R-20520	25,000 ct	1000 ct	250	.4	.4	.03	.6	2000	95	23.8	5:1	10:1	38.75
R-20525	30,000 ct	50 ct	12.5	.33	.33	.03	.6	2400	4.75	1.19	24.5:1	49:1	40.29
R-20530	30,000 ct	1200 ct	300	.33	.33	.03	.6	2400	114	28.5	5:1	10:1	40.28
R-20532	30,000 ct	500 ct	125	.33	.33	.03	.6	2400	47.5	11.88	7.7:1	15.5:1	40.28
R-20534	30,000 ct	200 ct	50	.33	.33	.03	.6	2400	19	4.75	12.2:1	24.5:1	40.28
R-20535	30,000 ct	5000 ct	1250	.33	.33	.03	.6	2400	475	119	2.45:1	4.9:1	40.28
R-20540	30,000 ct	10,000 ct	2500	.33	.33	.03	.6	2400	950	238	1.73:1	3.46:1	40.28
R-20545	*30,000 ct	30,000 ct	-	.33	.33	.03	.6	2400	2850	-	1:1	-	43.40
R-20550	40,000 ct	400 ct	100	.25	.25	.03	.5	3200	38	9.5	10:1	20:1	43.40
R-20555	40,000 ct	2000 ct	500	.25	.25	.03	.5	3200	190	47.5	4.47:1	8.94:1	43.40
R-20560	40,000 ct	4000 ct	1000	.25	.25	.03	.5	3200	380	95	3.16:1	6.32:1	43.40
R-20565	40,000 ct	20,000 ct	5000	.25	.25	.03	.5	3200	1900	475	1.41:1	2.83:1	43.40
R-20570	*40,000 ct	40,000 ct	-	.25	.25	.03	.5	3200	3800	-	1:1	-	48.18
R-20575	50,000 ct	200 ct	50	.2	.2	.03	.4	4000	19	4.75	15.8:1	31.6:1	48.18
R-20577	50,000 ct	500 ct	125	.2	.2	.03	.4	4000	47.5	11.88	10:1	20:1	48.18
R-20578	50,000 ct	600 ct	150	.2	.2	.03	.4	4000	57	14.3	9.13:1	18.26:1	48.18
R-20579	50,000 ct	50,000 ct	12,500	.2	.2	.03	.4	4000	4750	1190	1:1	2:1	48.18
R-20580	60,000 ct	15,000 ct	3750	.16	.16	.03	.4	4800	1430	358	2:1	4:1	52.05
R-20585	62,500 ct	50 ct	12.5	.16	.16	.03	.4	5000	4.75	1.19	35.4:1	70.7:1	52.05
R-20587	80,000 ct	15,000 ct	3750	.12	.12	.03	.3	6400	1430	358	2.3:1	4.6:1	52.05
R-20590	90,000 ct	10,000 ct	2500	.11	.11	.03	.3	7200	950	238	3:1	6:1	52.05
R-20595	95,000 ct	15,000 ct	3750	.1	.1	.03	.3	7600	1430	358	2.5:1	5:1	54.63
R-20600	100,000 ct	60 ct	15	.1	.1	.03	.3	8000	5.7	1.43	40.8:1	81.6:1	54.63
R-20605	100,000 ct	100 ct	25	.1	.1	.03	.3	8000	9.5	2.38	31.6:1	63.2:1	54.63
R-20610	100,000 ct	500 ct	125	.1	.1	.03	.3	8000	47.5	11.88	14.1:1	28.3:1	54.63
R-20613	100,000 ct	1000 ct	250	.1	.1	.03	.3	8000	95	23.8	10:1	20:1	54.63
R-20614	100,000 ct	2000 ct	500	.1	.1	.03	.3	8000	190	47.5	7.07:1	14.14:1	54.63
R-20615	100,000 ct	10,000 ct	2500	.1	.1	.03	.3	8000	950	238	3.16:1	6.32:1	54.63
R-20620	135,000 ct	82 ct	20.5	.07	.07	.03	.2	10,800	7.8	1.9	40.6:1	81.2:1	57.07

\*INCLUDES ELECTROSTATIC SHIELD

\*\*MINIATURIZED TELEPHONE COUPLING APPLICATION

\*\*\*Discount Prices: 1-9 Net; 10-24 less 10%; 25-49 less 16%; 50-99 less 23%; 100-499 less 30%  
Ordering Instructions: No minimum. Net 30 days F.O.B. Mt. Vernon, New York.

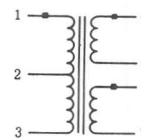
## PICO's ultra-miniature transformers

### R SERIES Plug-In

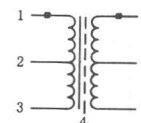
#### FEATURES

- EXTREME RESISTANCE TO THERMAL SHOCK
- ULTRA MINIATURE SIZE
- PICO IS APPROVED QPL SOURCE (MIL-T-27)
- MAGNETIC SHIELDS AVAILABLE
- ELECTROSTATIC SHIELDING CAN BE ADDED.
- VARIATION OF STANDARD DESIGNS AVAILABLE
- PRIMARY AND SECONDARY WINDINGS CAN BE USED EITHER AS INPUT OR OUTPUT.
- SPECIAL PRODUCTION TECHNIQUES ENSURE UNIFORM SIZE AND LEADS WHICH ARE FREE OF ENCAPSULANT. NO MENISCUS IN LEAD AREA.
- EVERY UNIT IN THIS CATALOG CAN BE MADE WITH A 300 THERMAL CYCLE GUARANTEE USING PICO'S SPECIAL SR CONSTRUCTION. CONTACT FACTORY FOR DETAILS.

SCHEMATIC FOR TRANSFORMERS  
WITH SPLIT SECONDARIES



SCHEMATIC FOR TRANSFORMERS  
WITH ELECTROSTATIC SHIELD



**PICO**  
Electronics,  
Inc.

453 N. MacQuesten Pkwy.  
Mt. Vernon, N.Y. 10552

914-699-5514

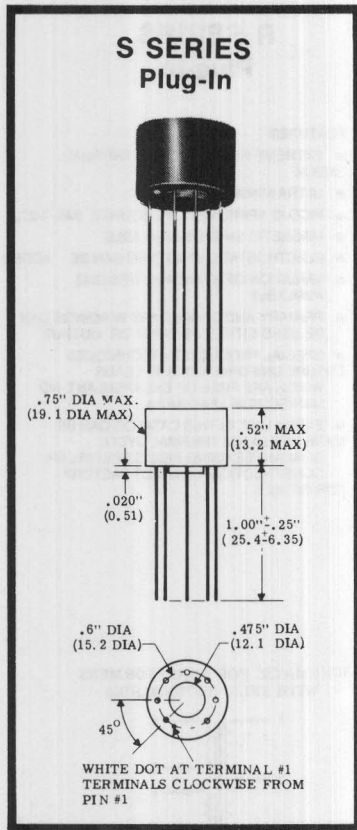
FAX 914-699-5565

Delivery—  
stock to one week

Call Toll Free  
800-431-1064

# PICO's ultra-miniature transformers

These units can be manufactured and tested to MIL-T-27/359.  
Contact factory for price and delivery information and  
appropriate parts numbers (MIL-T-27/359-01 thru MIL-T-27/359-147).



Dimensions are in inches (mm)

## SPECIFICATIONS

- **MIL-T-27:**.....  
All units manufactured to MIL-T-27, and are Hermetically Sealed in a Metal Case, Audio Transformers are Type TF5R21ZZ.
- **FREQUENCY RESPONSE:**.....  
±3db, 50 Hz-30 KHz at 1.0 Milliwatt.  
(±0.5 db, 300 Hz-5 KHz)
- **MAXIMUM DISTORTION:**.....  
5% With Rated Power Level at 1 KHz, 300 Hz and 50 Hz.
- **DIELECTRIC STRENGTH:**.....  
All Units Tested at 200 V RMS.
- **INSULATION RESISTANCE:**.....  
Greater Than 10,000 Megohms at 300 V DC.
- **WEIGHT:**.....  
17 Grams
- **OPERATING TEMPERATURE:**.....  
-55°c to +105°c (All Units Can be Supplied to Class S Requirements, +130°c).
- **TERMINALS:**.....  
Solid .020 Conductor, Tinned 100%. Electroplated Per Mil-T-10727A and ASTM CCS B452.
- **THERMAL SHOCK:**.....  
25 Cycles, Method 107C, MIL-STD-202D, Test Condition A-1.

THIS PRODUCT IS PATENTED

# PICO Electronics, Inc.

453 N. MacQuesten Pkwy.  
Mt. Vernon, N.Y. 10552

914-699-5514  
FAX 914-699-5565

PICO PART NUMBER	PRIMARY IMPEDANCE OHMS	SECONDARY IMPEDANCE OHMS SPLIT WINDINGS		POWER WATTS			PRIMARY UNBAL DC CURRENT ma	PRIMARY DC RESIST OHMS	SECONDARY DC RESISTANCE OHMS		TURNS RATIO PRIM/SEC		PICO PRICES 1-9 ***
		SER	PAR	1KHz and higher	300 Hz and higher	50 Hz and higher			SER CONN	PAR CONN	SEC CONN	PAR CONN	
S-21003	20 ct	8 ct	2	2.0	1.5	.05	22	1.6	.88	.22	1.58:1	3.16:1	26.62
S-21005	20 ct	20 ct	5	2.0	1.5	.05	22	1.6	2.2	.55	1:1	2:1	26.62
S-21010	32 ct	32 ct	8	2.0	1.5	.05	17.5	2.56	3.52	.88	1:1	2:1	26.62
S-21015	40 ct	40 ct	10	2.0	1.5	.05	16	3.2	4.4	1.1	1:1	2:1	26.62
S-21018	48 ct	16ct	4	2.0	1.5	.05	14.5	3.84	1.76	.44	1.73:1	3.46:1	26.62
S-21020	50 ct	50 ct	12.5	2.0	1.5	.05	14	4	5.5	1.38	1:1	2:1	26.62
S-21025	80 ct	32 ct	8	2.0	1.5	.05	11	6.4	3.52	.88	1.58:1	3.16:1	26.62
S-21028	100 ct	40 ct	10	2.0	1.5	.05	10	8	4.4	1.1	1.58:1	3.16:1	26.62
S-21030	100 ct	100 ct	25	2.0	1.5	.05	10	8	11	2.75	1:1	2:1	26.62
S-21035	120 ct	12.8 ct	3.2	2.0	1.5	.05	9	9.6	1.41	.35	3.06:1	6.12:1	26.62
S-21040	120 ct	60 ct	15	2.0	1.5	.05	9	9.6	6.6	1.65	1.41:1	2.83:1	26.62
S-21045	120 ct	120 ct	30	2.0	1.5	.05	9	9.6	13.2	3.3	1:1	2:1	26.62
S-21050	150 ct	12 ct	3	2.0	1.5	.05	8	12	1.32	.33	3.54:1	7.08:1	26.62
S-21055	150 ct	50 ct	12.5	2.0	1.5	.05	8	12	5.5	1.38	1.73:1	3.46:1	26.62
S-21060	150 ct	100 ct	25	2.0	1.5	.05	8	12	11	2.75	1.22:1	2.44:1	26.62
S-21065	150 ct	150 ct	37.5	2.0	1.5	.05	8	12	16.5	4.13	1:1	2:1	26.62
S-21070	150 ct	600 ct	150	2.0	1.5	.05	8	12	66	16.5	1:1	2:1	26.62
S-21075	200 ct	200 ct	50	2.0	1.5	.05	7	16	22	5.5	1:1	2:1	26.62
S-21080	300 ct	12 ct	3	2.0	1.5	.05	5.5	24	1.32	.33	5:1	10:1	26.62
S-21085	300 ct	50 ct	12.5	2.0	1.5	.05	5.5	24	5.5	1.38	2.45:1	4.9:1	26.62
S-21090	300 ct	150 ct	37.5	2.0	1.5	.05	5.5	24	16.5	4.13	1.41:1	2.83:1	26.62
S-21095	300 ct	300 ct	75	2.0	1.5	.05	5.5	24	33	8.25	1:1	2:1	26.62
S-21100	300 ct	600 ct	150	2.0	1.5	.05	5.5	24	66	16.5	1:1.41	1.41:1	26.62
S-21105	320 ct	12.8 ct	3.2	2.0	1.5	.05	5.5	25.6	1.41	.35	5:1	10:1	26.62
S-21110	400 ct	40 ct	10	2.0	1.5	.05	5	32	4.4	1.1	3.16:1	6.32:1	26.62
S-21115	400 ct	120 ct	30	2.0	1.5	.05	5	32	13.2	3.3	1.83:1	3.65:1	26.62
S-21120	400 ct	200 ct	50	2.0	1.5	.05	5	32	22	5.5	1.41:1	2.83:1	26.62
S-21125	400 ct	400 ct	100	2.0	1.5	.05	5	32	44	11	1:1	2:1	26.62
S-21130	400 ct	1000 ct	250	2.0	1.5	.05	5	32	110	27.5	1:1.58	1.26:1	26.62
S-21135	400 ct	2000 ct	500	2.0	1.5	.05	5	32	220	55	1:2.24	1:1.12	26.62
S-21140	400 ct	4000 ct	1000	2.0	1.5	.05	5	32	440	110	1:3.16	1:1.58	26.62
S-21142	500 ct	12.8 ct	3.2	2.0	1.5	.05	4.5	40	1.41	.35	6.25:1	12.5:1	26.62
S-21144	500 ct	16 ct	4	2.0	1.5	.05	4.5	40	1.76	.44	5.6:1	11.2:1	26.62
S-21145	500 ct	50 ct	12.5	2.0	1.5	.05	4.5	40	5.5	1.38	3.16:1	6.32:1	26.62
S-21147	500 ct	150 ct	37.5	2.0	1.5	.05	4.5	40	16.5	4.13	1.83:1	3.65:1	26.62
S-21150	500 ct	500 ct	125	2.0	1.5	.05	4.5	40	55	13.75	1:1	2:1	26.62
S-21155	*500 ct	500 ct	-	2.0	1.5	.05	4.5	40	55	-	1:1	-	27.68
S-21160	500 ct	600 ct	150	2.0	1.5	.05	4.5	40	66	16.5	1:1.1	1.83:1	26.62
S-21165	600 ct	12.8 ct	3.2	2.0	1.5	.05	4	48	1.41	.35	6.85:1	13.7	26.62
S-21167	600 ct	30 ct	7.5	2.0	1.5	.05	4	48	3.3	.83	4.47:1	8.94:1	26.62
S-21170	600 ct	48 ct	12	2.0	1.5	.05	4	48	5.28	1.37	3.54:1	7.07:1	26.62
S-21175	600 ct	200 ct	50	2.0	1.5	.05	4	48	22	5.5	1.73:1	3.46:1	26.62
S-21180**	600 ct	600 ct	150	2.0	1.5	.05	4	48	66	16.5	1:1	2:1	26.62
S-21185**	*600 ct	600 ct	-	2.0	1.5	.05	4	48	66	-	1:1	-	27.68
S-21186**	*600 ct	900 ct	-	2.0	1.5	.05	4	48	99	-	1:1.22	-	27.68
S-21187**	600 ct	1200 ct	300	2.0	1.5	.05	4	48	132	33	1:1.41	1.41:1	26.62
S-21190	640 ct	12.8 ct	3.2	2.0	1.5	.05	4	51	1.41	.35	7.07:1	14.14:1	26.62
S-21195	700 ct	100 ct	25	2.0	1.5	.05	3.5	56	11	2.75	2.65:1	5.29:1	26.62
S-21200	800 ct	12.8 ct	3.2	2.0	1.5	.05	3.5	64	1.41	.35	7.91:1	15.8:1	26.62
S-21205	800 ct	48 ct	12	2.0	1.5	.05	3.5	64	5.28	1.32	4.08:1	8.16:1	26.62
S-21210	800 ct	800 ct	200	2.0	1.5	.05	3.5	64	88	22	1:1	2:1	26.62
S-21215	900 ct	600 ct	150	2.0	1.5	.05	3	72	66	16.5	1.23:1	2.45:1	26.62
S-21217**	*900 ct	900 ct	-	2.0	1.5	.05	3	72	99	-	1:1	-	27.68
S-21220	1000 ct	12 ct	3	2.0	1.5	.05	3	80	1.32	.33	9.13:1	18.26:1	26.62
S-21225	1000 ct	50 ct	12.5	2.0	1.5	.05	3	80	5.5	1.38	4.47:1	8.94:1	26.62
S-21230	1000 ct	1000 ct	250	2.0	1.5	.05	3	80	110	27.5	1:1	2:1	26.62
S-21235	1060 ct	12.8 ct	3.2	2.0	1.5	.05	3	85	1.41	.35	9.1:1	18.2:1	26.62
S-21240	1200 ct	12.8 ct	3.2	2.0	1.5	.05	3	96	1.41	.35	9.68:1	19.4:1	26.62
S-21245	1200 ct	500 ct	125	2.0	1.5	.05	3	96	55	13.75	1.55:1	3.1:1	26.62
S-21250	1200 ct	1200 ct	300	2.0	1.5	.05	3	96	132	33	1:1	2:1	26.62
S-21255	*1200 ct	1200 ct	-	2.0	1.5	.05	3	96	132	-	1:1	-	27.68
S-21260	1500 ct	12 ct	3	2.0	1.5	.05	2.5	120	1.32	.33	11.18:1	22.36:1	26.62
S-21265	1500 ct	500 ct	125	2.0	1.5	.05	2.5	120	55	13.75	1.73:1	3.46:1	26.62
S-21270	*1500 ct	600 ct	-	2.0	1.5	.05	2.5	120	66	-	1.58:1	-	27.68
S-21275	*1500 ct	1500 ct	-	2.0	1.5	.05	2.5	120	165	-	1:1	-	27.68
S-21280	1600 ct	12.8 ct	3.2	2.0	1.5	.05	2.5	128	1.41	.35	11.18:1	22.36:1	26.62
S-21283	2000 ct	8 ct	2	2.0	1.5	.05	2.2	160	.88	.22	15.8:1	31.6:1	26.62
S-21285	2000 ct	2000 ct	500	2.0	1.5	.05	2.2	160	220	55	1:1	2:1	26.62
S-21290	*2000 ct	2000 ct	-	2.0	1.5	.05	2.2	160	220	-	1:1	-	27.68
S-21295	2000 ct	8000 ct	2000	2.0	1.5	.05	2.2	160	880	220	1:2	1:1	27.68
S-21297	2500 ct	2500 ct	625	2.0	1.5	.05	2	200	275	69	1:1	2:1	27.68
S-21300	3000 ct	3000 ct	750	2.0	1.5	.05	1.8	240	330	83	1:1	2:1	27.68
S-21305	*3000 ct	3000 ct	-	2.0	1.5	.05	1.8	240	330	-	1:1	-	27.68

\*INCLUDES ELECTROSTATIC SHIELD  
\*\*MINIATURIZED TELEPHONE COUPLING APPLICATION  
\*\*\*Discount Prices: 1-9 Net; 10-24 less 10%; 25-49 less 16%; 50-99 less 23%; 100-499 less 30%

Ordering Instructions: No minimum. Net 30 days F.O.B. Mt. Vernon, New York.



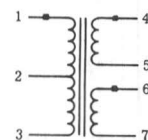
# PICO's ultra-miniature transformers

## S SERIES Plug-In

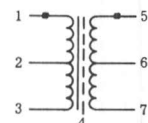
### FEATURES

- EXTREME RESISTANCE TO THERMAL SHOCK
- ULTRA MINIATURE SIZE
- PICO IS APPROVED QPL SOURCE (MIL-T-27)
- MAGNETIC SHIELDS AVAILABLE
- ELECTROSTATIC SHIELDING CAN BE ADDED.
- VARIATION OF STANDARD DESIGNS AVAILABLE
- PRIMARY AND SECONDARY WINDINGS CAN BE USED EITHER AS INPUT OR OUTPUT.
- SPECIAL PRODUCTION TECHNIQUES ENSURE UNIFORM SIZE AND LEADS WHICH ARE FREE OF ENCAPSULANT. NO MENISCUS IN LEAD AREA.
- EVERY UNIT IN THIS CATALOG CAN BE MADE WITH A 300 THERMAL CYCLE GUARANTEE USING PICO'S SPECIAL SR CONSTRUCTION. CONTACT FACTORY FOR DETAILS.

SCHEMATIC FOR TRANSFORMERS  
WITH SPLIT SECONDARIES



SCHEMATIC FOR TRANSFORMERS  
WITH ELECTROSTATIC SHIELD



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**Electronics,**  
**Inc.**

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PICO PART NUMBER		SECONDARY IMPEDANCE OHMS		POWER WATTS			PRIMARY UNBAL		SECONDARY DC RESISTANCE OHMS	TURNS RATIO PRIM/SEC		PICO PRICES 1-9 ***	
S-Series Plug-In	PRIMARY IMPEDANCE OHMS	SER	PAR	1KHz and higher	300 Hz and higher	50 Hz and higher	DC CURRENT ma	PRIMARY DC RESIST OHMS	SER CONN	PAR CONN	SEC SER CONN	SEC PAR CONN	S- Series
S-21310	3600 ct	3600 ct	900	2.0	1.5	.05	1.7	288	396	99	1:1	2:1	27.68
S-21312	4000 ct	16 ct	4	2.0	1.5	.05	1.6	320	1.76	.44	15.8:1	31.6:1	27.68
S-21314**	4000 ct	600 ct	150	2.0	1.5	.05	1.6	320	66	16.5	2.58:1	5.16:1	27.68
S-21315	4000 ct	1000 ct	250	2.0	1.5	.05	1.6	320	110	27.5	2:1	4:1	27.68
S-21320	*4000 ct	8000 ct	—	2.0	1.5	.05	1.6	320	880	—	1:1.41	—	27.68
S-21325	5000 ct	500 ct	125	2.0	1.5	.05	1.4	400	55	13.8	3.16:1	6.32:1	26.62
S-21330	5000 ct	5000 ct	1250	2.0	1.5	.05	1.4	400	550	138	1:1	2:1	26.62
S-21335	7500 ct	50 ct	12.5	1.3	1.3	.05	1.2	600	5.5	1.38	12.25:1	24.5:1	29.48
S-21340	7500 ct	100 ct	25	1.3	1.3	.05	1.2	600	11	2.75	8.66:1	17.32:1	29.48
S-21345	7500 ct	600 ct	150	1.3	1.3	.05	1.2	600	66	16.5	3.54:1	7.07:1	29.48
S-21350	7500 ct	2500 ct	625	1.3	1.3	.05	1.2	600	275	69	1.73:1	3.46:1	29.48
S-21355	*7500 ct	7500 ct	—	1.3	1.3	.05	1.2	600	825	—	1:1	—	31.87
S-21360	8000 ct	12.8 ct	3.2	1.2	1.2	.05	1.1	640	1.4	.35	25:1	50:1	29.48
S-21365	8000 ct	1000 ct	250	1.2	1.2	.05	1.1	640	110	27.5	2.83:1	5.66:1	29.48
S-21370	*8000 ct	1200 ct	—	1.2	1.2	.05	1.1	640	132	—	2.58:1	—	31.87
S-21375	*9000 ct	9000 ct	—	1.1	1.1	.05	1.1	720	990	—	1:1	—	31.87
S-21380	10,000 ct	12.8 ct	3.2	1.0	1.0	.05	1	800	1.4	.35	28:1	56:1	29.48
S-21385	10,000 ct	16 ct	4	1.0	1.0	.05	1	800	1.76	.44	25:1	50:1	29.48
S-21390	10,000 ct	100 ct	25	1.0	1.0	.05	1	800	11	2.75	10:1	20:1	29.48
S-21395	10,000 ct	200 ct	50	1.0	1.0	.05	1	800	22	5.5	7.07:1	14.14:1	29.48
S-21400	10,000 ct	500 ct	125	1.0	1.0	.05	1	800	55	13.75	4.47:1	8.94:1	29.48
S-21405	10,000 ct	600 ct	150	1.0	1.0	.05	1	800	66	16.5	4.08:1	8.16:1	29.48
S-21410	10,000 ct	1000 ct	250	1.0	1.0	.05	1	800	110	27.5	3.16:1	6.32:1	29.48
S-21415	10,000 ct	1200 ct	300	1.0	1.0	.05	1	800	132	33	2.89:1	5.77:1	29.48
S-21420	10,000 ct	1500 ct	375	1.0	1.0	.05	1	800	165	41.3	2.58:1	5.16:1	29.48
S-21425	10,000 ct	2000 ct	500	1.0	1.0	.05	1	800	220	55	2.24:1	4.47:1	29.48
S-21430	10,000 ct	5000 ct	1250	1.0	1.0	.05	1	800	550	138	1.41:1	1.83:1	29.48
S-21435	10,000 ct	7500 ct	1875	1.0	1.0	.05	1	800	825	206	1.16:1	2.31:1	29.48
S-21440	10,000 ct	10,000 ct	2500	1.0	1.0	.05	1	800	1100	275	1:1	2:1	29.48
S-21445	*10,000 ct	10,000 ct	—	1.0	1.0	.05	1	800	1100	—	1:1	—	31.87
S-21450	15,000 ct	400 ct	100	.65	.65	.05	.8	1200	44	11	6.12:1	12.25:1	29.48
S-21452	15,000 ct	500 ct	125	.65	.65	.05	.8	1200	55	13.8	5.48:1	10.95:1	29.48
S-21455	15,000 ct	600 ct	150	.65	.65	.05	.8	1200	66	16.5	5:1	10:1	29.48
S-21460	15,000 ct	10,000 ct	2500	.65	.65	.05	.8	1200	1100	275	1.22:1	2.45:1	29.48
S-21465	*15,000 ct	15,000 ct	—	.65	.65	.05	.8	1200	1650	—	1:1	—	31.87
S-21470	15,000 ct	15,000 ct	3750	.65	.65	.05	.8	1200	1650	413	1:1	2:1	29.48
S-21475	16,000 ct	1000 ct	250	.62	.62	.05	.8	1280	110	27.5	4:1	8:1	29.48
S-21480	20,000 ct	500 ct	125	.5	.5	.05	.7	1600	55	13.8	6.32:1	12.65:1	31.87
S-21485	20,000 ct	600 ct	150	.5	.5	.05	.7	1600	66	16.5	5.77:1	11.55:1	31.87
S-21490	20,000 ct	800 ct	200	.5	.5	.05	.7	1600	88	22	5:1	10:1	31.87
S-21495	20,000 ct	1000 ct	250	.5	.5	.05	.7	1600	110	27.5	4.47:1	8.94:1	31.87
S-21500	20,000 ct	5000 ct	1250	.5	.5	.05	.7	1600	550	138	2:1	4:1	31.87
S-21505	20,000 ct	10,000 ct	2500	.5	.5	.05	.7	1600	1100	275	1.41:1	2.83:1	31.87
S-21510	*20,000 ct	20,000 ct	—	.5	.5	.05	.7	1600	2200	—	1:1	—	32.82
S-21515	25,000 ct	500 ct	125	.4	.4	.05	.6	2000	55	13.8	7.07:1	14.14:1	31.87
S-21520	25,000 ct	1000 ct	250	.4	.4	.05	.6	2000	110	27.5	5:1	10:1	31.87
S-21525	30,000 ct	50 ct	12.5	.33	.33	.05	.6	2400	5.5	1.38	24.5:1	49:1	32.83
S-21530	30,000 ct	1200 ct	300	.33	.33	.05	.6	2400	132	33	5:1	10:1	32.83
S-21532	30,000 ct	500 ct	125	.33	.33	.05	.6	2400	55	13.8	7.7:1	15.5:1	32.83
S-21534	30,000 ct	200 ct	50	.33	.33	.05	.6	2400	22	5.5	12.2:1	24.5:1	32.83
S-21535	30,000 ct	5000 ct	1250	.33	.33	.05	.6	2400	550	137.5	2.45:1	4.9:1	32.83
S-21540	30,000 ct	10,000 ct	2500	.33	.33	.05	.6	2400	1100	275	1.73:1	3.46:1	32.83
S-21545	*30,000 ct	30,000 ct	—	.33	.33	.05	.6	2400	3300	—	1:1	—	35.29
S-21550	40,000 ct	400 ct	100	.25	.25	.05	.5	3200	44	11	10:1	20:1	35.29
S-21555	40,000 ct	2000 ct	500	.25	.25	.05	.5	3200	220	55	4.47:1	8.94:1	35.29
S-21560	40,000 ct	4000 ct	1000	.25	.25	.05	.5	3200	440	110	3.16:1	6.32:1	35.29
S-21565	40,000 ct	20,000 ct	5000	.25	.25	.05	.5	3200	2200	550	1.41:1	2.83:1	35.29
S-21570	*40,000 ct	40,000 ct	—	.25	.25	.05	.5	3200	4400	—	1:1	—	39.29
S-21575	50,000 ct	200 ct	50	.2	.2	.05	.4	4000	22	5.5	15.8:1	31.6:1	39.29
S-21577	50,000 ct	500 ct	125	.2	.2	.05	.4	4000	55	13.8	10:1	20:1	39.29
S-21578	50,000 ct	600 ct	150	.2	.2	.05	.4	4000	66	16.5	9.13:1	18.26:1	39.29
S-21579	50,000 ct	50,000 ct	12,500	.2	.2	.05	.4	4000	5500	1380	1:1	2:1	39.29
S-21580	60,000 ct	15,000 ct	3750	.16	.16	.05	.4	4800	1650	413	2:1	4:1	39.65
S-21585	62,500 ct	50 ct	12.5	.16	.16	.05	.4	5000	5.5	1.38	35.4:1	70.7:1	39.65
S-21587	80,000 ct	15,000 ct	3750	.12	.12	.05	.3	6400	1650	413	2.3:1	4.6:1	39.65
S-21590	90,000 ct	10,000 ct	2500	.11	.11	.05	.3	7200	1100	275	3:1	6:1	44.54
S-21595	95,000 ct	15,000 ct	3750	.1	.1	.05	.3	7600	1650	413	2.5:1	5:1	44.54
S-21600	100,000 ct	60 ct	15	.1	.1	.05	.3	8000	6.6	1.65	40.8:1	81.6:1	44.54
S-21605	100,000 ct	100 ct	25	.1	.1	.05	.3	8000	11	2.75	31.6:1	63.2:1	44.54
S-21610	100,000 ct	500 ct	125	.1	.1	.05	.3	8000	55	13.8	14.1:1	28.3:1	44.54
S-21613	100,000 ct	1000 ct	250	.1	.1	.05	.3	8000	110	27.5	10:1	20:1	44.54
S-21614	100,000 ct	2000 ct	500	.1	.1	.05	.3	8000	220	55	7.07:1	14.14:1	44.54
S-21615	100,000 ct	10,000 ct	2500	.1	.1	.05	.3	8000	1100	275	3.16:1	6.32:1	44.54
S-21620	135,000 ct	82 ct	20.5	.07	.07	.05	.2	10,800	9	2.25	40.6:1	81.2:1	46.54

\*INCLUDES ELECTROSTATIC SHIELD

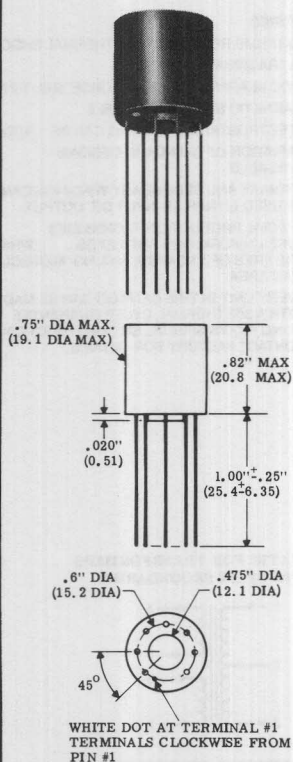
\*\*MINIATURIZED TELEPHONE COUPLING APPLICATION

\*\*\*Discount Prices: 1-9 Net; 10-24 less 10%; 25-49 less 16%; 50-99 less 23%; 100-499 less 30 %  
Ordering Instructions: No minimum. Net 30 days F.O.B. Mt. Vernon, New York



# PICO's ultra-miniature transformers

## T SERIES Plug-In



Dimensions are in inches (MM)

### SPECIFICATIONS

● **MIL-T-27**.....  
All units manufactured to MIL-T-27, and are Hermetically Sealed in a Metal Case, Audio Transformers are Type TF5R21ZZ.

● **FREQUENCY RESPONSE**.....  
±3db, 20 Hz-25 KHz at 1.0 Milliwatt.

● **MAXIMUM DISTORTION**.....  
5% With Rated Power Level at 1 KHz and 300 Hz. 10% Distortion at 20 Hz.

● **DIELECTRIC STRENGTH**.....  
All Units Tested at 200 V RMS.

● **INSULATION RESISTANCE**.....  
Greater Than 10,000 Megohms at 300 V DC.

● **WEIGHT**.....  
28 Grams

● **OPERATING TEMPERATURE**.....  
-55°c to +105°c (All Units Can be Supplied to Class S Requirements, +130°c).

● **TERMINALS**.....  
Solid .020 Conductor. Conductor is Copper Clad Steel. Tinned 100%. Electroplated Per Mil-T-10727A and ASTM CCS B452.

● **THERMAL SHOCK**.....  
25 Cycles, Method 107C, MIL-STD-202D, Test Condition A-1.

THIS PRODUCT IS PATENTED

**Delivery—  
stock to one week**

PICO PART NUMBER	PRIMARY IMPEDANCE OHMS	SECONDARY IMPEDANCE OHMS SPLIT WINDINGS		POWER WATTS			PRIMARY UNBAL DC CURRENT ma	PRIMARY DC RESIST OHMS	SECONDARY DC RESISTANCE OHMS		TURNS RATIO PRIME/SEC		PICO PRICES 1-9 ***
		SER	PAR	1KHz and higher	300 Hz and higher	20 Hz and higher			SER CONN	PAR CONN	SEC SER CONN	SEC PAR CONN	
T-22003	20 ct	8 ct	2	3.0	2.0	.006	22	1.6	.8	.2	1.58:1	3.16:1	29.23
T-22005	20 ct	20 ct	5	3.0	2.0	.006	22	1.6	.2	.5	1:1	2:1	29.23
T-22010	32 ct	32 ct	8	3.0	2.0	.006	17.5	2.56	3.2	.8	1:1	2:1	29.23
T-22015	40 ct	40 ct	10	3.0	2.0	.006	16	3.2	4	1	1:1	2:1	29.23
T-22018	48 ct	16 ct	4	3.0	2.0	.006	14.5	3.84	1.6	.4	1.73:1	3.46:1	29.23
T-22020	50 ct	50 ct	12.5	3.0	2.0	.006	14	4	5	1.25	1:1	2:1	29.23
T-22025	80 ct	32 ct	8	3.0	2.0	.006	11	6.4	3.2	.8	1.58:1	3.16:1	29.23
T-22028	100 ct	40 ct	10	3.0	2.0	.006	10	8	4	1	1.58:1	3.16:1	29.23
T-22030	100 ct	100 ct	25	3.0	2.0	.006	10	8	10	2.5	1:1	2:1	29.23
T-22035	120 ct	12.8 ct	3.2	3.0	2.0	.006	9	9.6	1.3	.32	3.06:1	26.12:1	29.23
T-22040	120 ct	60 ct	15	3.0	2.0	.006	9	9.6	6	1.5	1.41:1	2.83:1	29.23
T-22045	120 ct	120 ct	30	3.0	2.0	.006	9	9.6	12	3	1:1	2:1	29.23
T-22050	150 ct	12 ct	3	3.0	2.0	.006	8	12	1.2	.3	3.54:1	7.08:1	29.23
T-22055	150 ct	50 ct	12.5	3.0	2.0	.006	8	12	5	1.25	1.73:1	3.46:1	29.23
T-22060	150 ct	100 ct	25	3.0	2.0	.006	8	12	10	2.5	1.22:1	2.44:1	29.23
T-22065	150 ct	150 ct	37.5	3.0	2.0	.006	8	12	15	3.75	1:1	2:1	29.23
T-22070	150 ct	600 ct	150	3.0	2.0	.006	8	12	60	15	1.2	1:1	29.23
T-22075	200 ct	200 ct	50	3.0	2.0	.006	7	16	20	5	1:1	2:1	29.23
T-22080	300 ct	12 ct	3	3.0	2.0	.006	5.5	24	1.2	.3	5:1	10:1	29.23
T-22085	300 ct	50 ct	12.5	3.0	2.0	.006	5.5	24	5	1.25	2.45:1	4.9:1	29.23
T-22090	300 ct	150 ct	37.5	3.0	2.0	.006	5.5	24	15	3.75	1.41:1	2.83:1	29.23
T-22095	300 ct	300 ct	75	3.0	2.0	.006	5.5	24	30	7.5	1:1	2:1	29.23
T-22100	300 ct	600 ct	150	3.0	2.0	.006	5.5	24	60	15	1.41:1	1.41:1	29.23
T-22105	320 ct	12.8 ct	3.2	3.0	2.0	.006	5.5	25.6	1.3	.32	5:1	10:1	29.23
T-22110	400 ct	40 ct	10	3.0	2.0	.006	5	32	4	1	3.16:1	16.32:1	29.23
T-22115	400 ct	120 ct	30	3.0	2.0	.006	5	32	12	3	1.83:1	3.65:1	29.23
T-22120	400 ct	200 ct	50	3.0	2.0	.006	5	32	20	5	1.41:1	2.83:1	29.23
T-22125	400 ct	400 ct	100	3.0	2.0	.006	5	32	40	10	1:1	2:1	29.23
T-22130	400 ct	1000 ct	250	3.0	2.0	.006	5	32	100	25	1:1.58	1.26:1	29.23
T-22135	400 ct	2000 ct	500	3.0	2.0	.006	5	32	200	50	1:2.24	1:1.12	29.23
T-22140	400 ct	4000 ct	1000	3.0	2.0	.006	5	32	400	100	1:3.16	1:1.58	29.23
T-22142	500 ct	12.8 ct	3.2	3.0	2.0	.006	4.5	40	1.3	.32	6.25:1	12.5:1	29.23
T-22144	500 ct	16 ct	4	3.0	2.0	.006	4.5	40	1.6	.4	5.6:1	11.2:1	29.23
T-22145	500 ct	50 ct	12.5	3.0	2.0	.006	4.5	40	5	1.25	3.16:1	6.32:1	29.23
T-22147	500 ct	150 ct	37.5	3.0	2.0	.006	4.5	40	15	3.75	1.83:1	3.65:1	29.23
T-22150	500 ct	500 ct	125	3.0	2.0	.006	4.5	40	50	12.5	1:1	2:1	29.23
T-22155	*500 ct	500 ct	—	3.0	2.0	.006	4.5	40	50	—	1:1	—	30.46
T-22160	500 ct	600 ct	150	3.0	2.0	.006	4.5	40	60	15	1:1.1	1.83:1	29.23
T-22165	600 ct	12.8 ct	3.2	3.0	2.0	.006	4	48	1.3	.32	6.85:1	13.7:1	29.23
T-22167	600 ct	30 ct	7.5	3.0	2.0	.006	4	48	3	.75	4.47:1	8.94:1	29.23
T-22170	600 ct	48 ct	12	3.0	2.0	.006	4	48	4.8	1.2	3.54:1	7.07:1	29.23
T-22175	600 ct	200 ct	50	3.0	2.0	.006	4	48	20	5	1.73:1	3.46:1	29.23
T-22180**	600 ct	600 ct	150	3.0	2.0	.006	4	48	60	15	1:1	2:1	29.23
T-22185**	*600 ct	600 ct	—	3.0	2.0	.006	4	48	60	—	1:1	—	30.46
T-22186**	*600 ct	900 ct	—	3.0	2.0	.006	4	48	90	—	1:1.22	—	30.46
T-22187**	600 ct	1200 ct	300	3.0	2.0	.006	4	48	120	30	1:1.41	1.41:1	29.23
T-22190	640 ct	12.8 ct	3.2	3.0	2.0	.006	4	51	1.3	.32	7.07:1	14.14:1	29.23
T-22195	700 ct	100 ct	25	3.0	2.0	.006	3.5	56	10	2.5	2.65:1	5.29:1	29.23
T-22200	800 ct	12.8 ct	3.2	3.0	2.0	.006	3.5	64	1.3	.32	7.91:1	15.8:1	29.23
T-22205	800 ct	48 ct	12	3.0	2.0	.006	3.5	64	4.8	1.2	4.08:1	8.16:1	29.23
T-22210	800 ct	800 ct	200	3.0	2.0	.006	3.5	64	80	20	1:1	2:1	29.23
T-22215	900 ct	600 ct	150	3.0	2.0	.006	3	72	60	15	1.22:1	2.45:1	29.23
T-22217**	*900 ct	900 ct	—	3.0	2.0	.006	3	72	90	—	1:1	—	30.46
T-22220	1000 ct	12 ct	3	3.0	2.0	.006	3	80	1.2	.3	9.13:1	18.26:1	29.23
T-22225	1000 ct	50 ct	12.5	3.0	2.0	.006	3	80	5	1.25	4.47:1	8.94:1	29.23
T-22230	1000 ct	1000 ct	250	3.0	2.0	.006	3	80	100	25	1:1	2:1	29.23
T-22235	1060 ct	12.8 ct	3.2	3.0	2.0	.006	3	85	1.3	.32	9.1:1	18.2:1	29.23
T-22240	1200 ct	12.8 ct	3.2	3.0	2.0	.006	3	96	1.3	.32	9.68:1	19.4:1	29.23
T-22245	1200 ct	500 ct	125	3.0	2.0	.006	3	96	50	12.5	1.55:1	3.1:1	29.23
T-22250	1200 ct	1200 ct	300	3.0	2.0	.006	3	96	120	30	1:1	2:1	29.23
T-22255	*1200 ct	1200 ct	—	3.0	2.0	.006	3	96	120	—	1:1	—	30.46
T-22260	1500 ct	12 ct	3	3.0	2.0	.006	2.5	120	1.2	.3	11.18:1	22.36:1	29.23
T-22265	1500 ct	500 ct	125	3.0	2.0	.006	2.5	120	50	12.5	1.73:1	3.46:1	29.23
T-22270	*1500 ct	600 ct	—	3.0	2.0	.006	2.5	120	60	—	1.58:1	—	30.46
T-22275	*1500 ct	1500 ct	—	3.0	2.0	.006	2.5	120	150	—	1:1	—	30.46
T-22280	1600 ct	12.8 ct	3.2	3.0	2.0	.006	2.5	128	1.3	.32	11.18:1	22.36:1	29.23
T-22283	2000 ct	8 ct	2	3.0	2.0	.006	2.2	160	.8	.2	15.8:1	31.6:1	29.23
T-22285	2000 ct	2000 ct	500	3.0	2.0	.006	2.2	160	200	50	1:1	2:1	29.23
T-22290	*2000 ct	2000 ct	—	3.0	2.0	.006	2.2	160	200	—	1:1	—	30.46
T-22295	2000 ct	8000 ct	2000	3.0	2.0	.006	2.2	160	800	200	1:2	1:1	29.23
T-22297	2500 ct	2500 ct	625	3.0	2.0	.006	2	200	250	63	1:1	2:1	29.23
T-22300	3000 ct	3000 ct	750	3.0	2.0	.006	1.8	240	300	75	1:1	2:1	29.23
T-22305	*3000 ct	3000 ct	—	3.0	2.0	.006	1.8	240	300	—	1:1	—	29.23

\*INCLUDES ELECTROSTATIC SHIELD

\*\*MINIATURIZED TELEPHONE COUPLING APPLICATION

\*\*\*Discount Prices: 1-9 Net; 10-24 less 10%; 25-49 less 16%; 50-99 less 23%; 100-499 less 30%

Ordering Instructions: No minimum. Net 30 days F.O.B. Mt. Vernon, New York.

For immediate engineering assistance or to place an order—Call Toll Free 800-431-1064

# PICO's ultra-miniature transformers

## T SERIES Plug-In

PICO PART NUMBER	PRIMARY IMPEDANCE OHMS	SECONDARY IMPEDANCE OHMS		POWER WATTS			PRIMARY UNBAL DC CURRENT ma	PRIMARY DC RESIST OHMS	SECONDARY DC RESISTANCE OHMS		TURNS RATIO PRIM/SEC		PICO PRICES 1-9 ***
		SER	PAR	1KHz and higher	300 Hz and higher	20 Hz and higher			SER CONN	PAR CONN	SEC SER CONN	SEC PAR CONN	
T-22310	3600 ct	3600 ct	900	2.7	2.0	.006	1.7	288	360	90	1:1	2:1	29.23
T-22312	4000 ct	16 ct	4	2.5	2.0	.006	1.6	320	1.6	.4	15.8:1	31.6:1	29.23
T-22314**	4000 ct	600 ct	150	2.5	2.0	.006	1.6	320	60	15	2.58:1	5.16:1	29.23
T-22315	4000 ct	1000 ct	250	2.5	2.0	.006	1.6	320	100	25	2:1	4:1	29.23
T-22320	*4000 ct	8000 ct	-	2.5	2.0	.006	1.6	320	800	-	1:1.41	-	30.46
T-22325	5000 ct	500 ct	125	2.0	2.0	.006	1.4	400	50	12.5	3.16:1	6.32:1	29.32
T-22330	5000 ct	5000 ct	1250	2.0	2.0	.006	1.4	400	500	125	1:1	2:1	29.32
T-22335	7500 ct	50 ct	12.5	1.3	1.3	.006	1.2	600	5	1.25	12.25:1	24.5:1	32.42
T-22340	7500 ct	100 ct	25	1.3	1.3	.006	1.2	600	10	2.5	8.66:1	17.32:1	32.42
T-22345	7500 ct	600 ct	150	1.3	1.3	.006	1.2	600	60	15	3.54:1	7.07:1	32.42
T-22350	7500 ct	2500 ct	625	1.3	1.3	.006	1.2	600	250	63	1.73:1	3.46:1	32.42
T-22355	*7500 ct	7500 ct	-	1.3	1.3	.006	1.2	600	750	-	1:1	-	34.76
T-22360	8000 ct	12.8 ct	3.2	1.2	1.2	.006	1.1	640	1.3	.32	25:1	50:1	32.42
T-22365	8000 ct	1000 ct	250	1.2	1.2	.006	1.1	640	100	25	2.83:1	5.66:1	32.42
T-22370	*8000 ct	1200 ct	-	1.2	1.2	.006	1.1	640	120	-	2.58:1	-	34.76
T-22375	*9000 ct	9000 ct	-	1.1	1.1	.006	1.1	720	900	-	1:1	-	34.76
T-22380	10,000 ct	12.8 ct	3.2	1.0	1.0	.006	1	800	1.3	.32	28:1	56:1	32.42
T-22385	10,000 ct	16 ct	4	1.0	1.0	.006	1	800	1.6	.4	25:1	50:1	32.42
T-22390	10,000 ct	100 ct	25	1.0	1.0	.006	1	800	10	2.5	10:1	20:1	32.42
T-22395	10,000 ct	200 ct	50	1.0	1.0	.006	1	800	20	5	7.07:1	14.14:1	32.42
T-22400	10,000 ct	500 ct	125	1.0	1.0	.006	1	800	50	12.5	4.47:1	8.94:1	32.42
T-22405	10,000 ct	600 ct	150	1.0	1.0	.006	1	800	60	15	4.08:1	8.16:1	32.42
T-22410	10,000 ct	1000 ct	250	1.0	1.0	.006	1	800	100	25	3.16:1	6.32:1	32.42
T-22415	10,000 ct	1200 ct	300	1.0	1.0	.006	1	800	120	30	2.89:1	5.77:1	32.42
T-22420	10,000 ct	1500 ct	375	1.0	1.0	.006	1	800	150	38	2.58:1	5.16:1	32.42
T-22425	10,000 ct	2000 ct	500	1.0	1.0	.006	1	800	200	50	2.24:1	4.47:1	32.42
T-22430	10,000 ct	5000 ct	1250	1.0	1.0	.006	1	800	500	125	1.41:1	2.83:1	32.42
T-22435	10,000 ct	7500 ct	1875	1.0	1.0	.006	1	800	750	188	1.16:1	2.31:1	32.42
T-22440	10,000 ct	10,000 ct	2500	1.0	1.0	.006	1	800	1000	250	1:1	2:1	32.42
T-22445	*10,000 ct	10,000 ct	-	1.0	1.0	.006	1	800	1000	-	1:1	-	34.76
T-22450	15,000 ct	400 ct	100	.66	.66	.006	.8	1200	40	10	6.12:1	12.25:1	32.42
T-22452	15,000 ct	500 ct	125	.66	.66	.006	.8	1200	50	12.5	5.48:1	10.95:1	32.42
T-22455	15,000 ct	600 ct	150	.66	.66	.006	.8	1200	60	15	5:1	10:1	32.42
T-22460	15,000 ct	10,000 ct	2500	.66	.66	.006	.8	1200	1000	250	1.22:1	2.45:1	32.42
T-22465	*15,000 ct	15,000 ct	-	.66	.66	.006	.8	1200	1500	-	1:1	-	34.76
T-22470	15,000 ct	15,000 ct	3750	.66	.66	.006	.8	1200	1500	375	1:1	2:1	32.42
T-22475	16,000 ct	1000 ct	250	.62	.62	.006	.8	1280	100	25	4:1	8:1	32.42
T-22480	20,000 ct	500 ct	125	.5	.5	.006	.7	1600	50	12.5	6.32:1	12.6:1	34.76
T-22485	20,000 ct	600 ct	150	.5	.5	.006	.7	1600	60	15	5.77:1	11.55:1	34.76
T-22490	20,000 ct	800 ct	200	.5	.5	.006	.7	1600	80	20	5:1	10:1	34.76
T-22495	20,000 ct	1000 ct	250	.5	.5	.006	.7	1600	100	25	4.47:1	8.94:1	34.76
T-22500	20,000 ct	5000 ct	1250	.5	.5	.006	.7	1600	500	125	2:1	4:1	34.76
T-22505	20,000 ct	10,000 ct	2500	.5	.5	.006	.7	1600	1000	250	1.41:1	2.83:1	34.76
T-22510	*20,000 ct	20,000 ct	-	.5	.5	.006	.7	1600	2000	-	1:1	-	36.12
T-22515	25,000 ct	500 ct	125	.4	.4	.006	.6	2000	50	12.5	7.07:1	14.14:1	34.76
T-22520	25,000 ct	1000 ct	250	.4	.4	.006	.6	2000	100	25	5:1	10:1	34.76
T-22525	30,000 ct	50 ct	12.5	.33	.33	.006	.6	2400	5	1.25	24.5:1	49:1	36.12
T-22530	30,000 ct	1200 ct	300	.33	.33	.006	.6	2400	120	30	5:1	10:1	36.12
T-22532	30,000 ct	500 ct	125	.33	.33	.006	.6	2400	50	12.5	7.7:1	15.5:1	36.12
T-22534	30,000 ct	200 ct	50	.33	.33	.006	.6	2400	20	5	12.2:1	24.5:1	36.12
T-22535	30,000 ct	5000 ct	1250	.33	.33	.006	.6	2400	500	125	2.45:1	4.9:1	36.12
T-22540	30,000 ct	10,000 ct	2500	.33	.33	.006	.6	2400	1000	250	1.73:1	3.46:1	36.12
T-22545	*30,000 ct	30,000 ct	-	.33	.33	.006	.6	2400	3000	-	1:1	-	38.73
T-22550	40,000 ct	400 ct	100	.25	.25	.006	.5	3200	40	10	10:1	20:1	38.73
T-22555	40,000 ct	2000 ct	500	.25	.25	.006	.5	3200	200	50	4.47:1	8.94:1	38.73
T-22560	40,000 ct	4000 ct	1000	.25	.25	.006	.5	3200	400	100	3.16:1	6.32:1	38.73
T-22565	40,000 ct	20,000 ct	5000	.25	.25	.006	.5	3200	2000	500	1.41:1	2.83:1	38.73
T-22570	*40,000 ct	40,000 ct	-	.25	.25	.006	.5	3200	4000	-	1:1	-	43.19
T-22575	50,000 ct	200 ct	50	.2	.2	.006	.4	4000	20	5	15.8:1	31.6:1	43.19
T-22577	50,000 ct	500 ct	125	.2	.2	.006	.4	4000	50	12.5	10:1	20:1	43.19
T-22578	50,000 ct	600 ct	150	.2	.2	.006	.4	4000	60	15	9.13:1	18.26:1	43.19
T-22579	50,000 ct	50,000 ct	12,500	.2	.2	.006	.4	4000	5000	1250	1:1	2:1	43.19
T-22580	60,000 ct	15,000 ct	3750	.16	.16	.006	.4	4800	1500	375	2:1	4:1	46.64
T-22585	62,500 ct	50 ct	12.5	.16	.16	.006	.4	5000	5	1.25	35.4:1	70.7:1	46.64
T-22587	80,000 ct	15,000 ct	3750	.12	.12	.006	.3	6400	1500	375	2.3:1	4.6:1	46.64

\*INCLUDES ELECTROSTATIC SHIELD

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Delivery—  
stock to one week

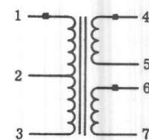
# PICO Electronics, Inc.

453 N. MacQuesten Pkwy., Mt. Vernon, N.Y. 10552 • 914-699-5514 • FAX 914-699-5565

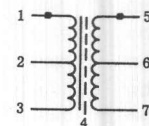
### FEATURES

- EXTREME RESISTANCE TO THERMAL SHOCK
- ULTRA MINIATURE SIZE
- PICO IS APPROVED QPL SOURCE (MIL-T-27)
- MAGNETIC SHIELDS AVAILABLE
- ELECTROSTATIC SHIELDING CAN BE ADDED.
- VARIATION OF STANDARD DESIGNS AVAILABLE
- PRIMARY AND SECONDARY WINDINGS CAN BE USED EITHER AS INPUT OR OUTPUT.
- SPECIAL PRODUCTION TECHNIQUES ENSURE UNIFORM SIZE AND LEADS WHICH ARE FREE OF ENCAPSULANT. NO MENISCUS IN LEAD AREA.
- EVERY UNIT IN THIS CATALOG CAN BE MADE WITH A 300 THERMAL CYCLE GUARANTEE USING PICO'S SPECIAL SR CONSTRUCTION. CONTACT FACTORY FOR DETAILS.

SCHEMATIC FOR TRANSFORMERS  
WITH SPLIT SECONDARIES



SCHEMATIC FOR TRANSFORMERS  
WITH ELECTROSTATIC SHIELD

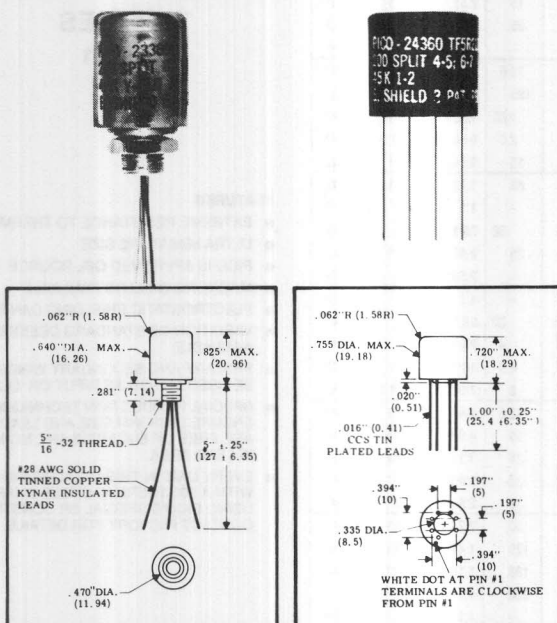


For immediate  
engineering  
assistance  
or to place  
an order—  
Call Toll Free  
800-431-1064

# PICO Microphone/Transducer Audio Input Transformers

Used for Professional Sound Studios/Broadcast Mixing Consoles/Control and Instrument Amplifiers.

Interchangeable with transformers made by Beyer Dynamic of Germany.



NOTE:  
ALL DIMENSIONS ARE IN INCHES. ( ) = MM

NOTES:  
ALL DIMENSIONS ARE IN INCHES. ( ) = MM.  
CCS-COPPER CLAD STEEL, TINNED 100%  
ELECTROPLATED PER MIL-T-10727A  
AND ASTM CCS B452.

- Large step-up ratios with flat frequency response over the entire audio range.
- Gapless laminations provide wide bandwidth with extremely low distortion. Use of two magnetic shields made with extra thick mu-metal and gapless core provide negligible hum pick up. All units provided with electrostatic shield.
- Your choice of two package styles, stud mounting with flying leads or low profile plug-in. Identical electrical performance regardless of package style.
- Frequency response  $\pm 1$  dB, 30 Hz – 15 kHz.
- Low profile plug-in (24000 series) manufactured to MIL-T-27 (TF5R21ZZ).
- Because of gapless laminations, unbalanced DC current should be avoided.
- Typical distortion of 1% at power level of 0 dBm (1 Milliwatt), 30 Hz – 15 kHz. If the low frequency is raised, the power level for 1% distortion is as follows:

50 Hz	-	3 Milliwatts (4.7 dBm)
100 Hz	-	10 Milliwatts (10 dBm)
300 Hz	-	150 Milliwatts (21.7 dBm)

For immediate engineering assistance  
or to place an order—  
**Call Toll Free 800-431-1064**

All units have two extra thick mu-metal shields.

**Delivery-Stock to 1 week**

**Modification of standards 9 days!**

THIS PRODUCT IS PATENTED

PART NUMBER		IMPEDANCE OHMS		TURNS RATIO PRIM/SEC		D.C. RESISTANCE			TYPICAL PRIM OPEN CIRCUIT IMPEDANCE AT 50 Hz	REPLACES BEYER/GERMANY PART NUMBER		PRICES 1-9***	
COMMER- CIAL STUD MOUNTING	MILITARY PLUG-IN	PRIM	SEC	PRIM SERIES CONN	PRIM PAR CONN	PRIM SERIES CONN	PRIM PAR CONN	SEC		STUD MOUNTING (23000 SERIES)	PLUG-IN (24000 SERIES)	COMMER- CIAL STUD MOUNTING	MILITARY PLUG-IN
23120	24120	12.5	5K	1:20	—	4.6	—	1K	125	TR-BV35704	STR-BV37704	36.07	43.34
23140	24140	200	200	1:1	—	50	—	75	2K	351 001 001	370 001 001	34.13	39.81
23160	24160	200 ct/50 SPLIT	200	1:1	1:2	50	12.5	75	2K	351 201 001	370 201 001	33.64	40.92
23180	24180	200	2K	1:3.16	—	50	—	580	2K	351 003 002	370 003 002	34.13	39.81
23200	24200	200 ct/50 SPLIT	2K	1:3.16	1:6.33	50	12.5	580	2K	351 203 002	370 203 002	33.64	40.92
23220	24220	200	5K	1:5	—	50	—	1.45K	2K	351 005 003	370 005 003	34.05	39.81
23240	24240	200 ct/50 SPLIT	5K	1:5	1:10	50	12.5	1.45K	2K	351 205 003	370 205 003	34.05	44.65
23260	24260	200	10K	1:7.07	—	50	—	3.45K	2K	351 007 004	370 007 004	33.64	40.92
23280	24280	200 ct/50 SPLIT	10K	1:7.07	1:14.14	50	12.5	3.45K	2K	351 207 004	370 207 004	38.49	45.77
23300	24300	200	20K	1:10	—	85	—	4.75K	2K	351 010 005	370 010 005	35.01	42.24
23320	24320	200 ct/50 SPLIT	20K	1:10	1:20	85	21	4.75K	2K	351 210 005	370 210 005	39.81	47.08
23340	24340	200	45K	1:15	—	85	—	10.4 K	2K	351 015 006	370 015 006	41.65	48.17
23360	24360	200 ct/50 SPLIT	45K	1:15	1:30	85	21	10.4 K	2K	351 215 006	370 215 006	45.77	52.99
23380	24380	200	80K	1:20	—	115	—	13.5 K	2K	351 020 007	370 020 007	43.34	50.57
23400	24400	200 ct/50 SPLIT	80K	1:20	1:40	115	29	13.5 K	2K	351 220 007	370 220 007	48.17	55.40
23420	24420	600 ct	600	1:1	—	140	—	190	6K	TR-145/BV35508 351 101 031	STR-145/BV37508 370 101 031	33.64	40.92
23440	24440	600 ct/150 SPLIT	600	1:1	1:2	140	35	190	6K	351 201 031	370 201 031	41.65	43.34
23460	24460	600 ct/150 SPLIT	2.4K	1:2	1:4	140	35	575	6K	351 202 032	370 202 032	38.49	45.77
23480	24480	600 ct/150 SPLIT	6K	1:3.16	1:6.33	140	35	1.45 K	6K	351 203 033	370 203 033	40.94	46.02
23500	24500	600 ct/150 SPLIT	15K	1:5	1:10	140	35	3.9 K	6K	351 205 034	370 205 034	43.34	50.57
23520	24520	600 ct/150 SPLIT	30K	1:7.07	1:14.14	140	35	7.05 K	6K	351 207 035	370 207 035	45.77	52.99
23540	24540	600 ct/150 SPLIT	60K	1:10	1:20	199	50	11 K	6K	351 210 036	370 210 036	48.17	55.40
23560	24560	1.2K ct/300 SPLIT	1.2K	1:1	1:2	310	78	430	12K	351 201 061	370 201 061	36.07	43.34
23580	24580	1.2K ct/300 SPLIT	5K	1:2.04	1:4.08	310	78	1.4 K	12K	351 202 062	370 202 062	38.49	45.77
23600	24600	1.2K ct/300 SPLIT	12K	1:3.16	1:6.33	310	78	3.75 K	12K	351 203 063	370 203 063	40.94	46.02
23620	24620	1.2K ct/300 SPLIT	30K	1:5	1:10	475	119	8.45 K	12K	351 205 064	370 205 064	43.34	50.57
23640	24640	10K	10K	1:1	—	2.5 K	—	3.1 K	100K	TR-145/BV35590	STR-145/BV37590	34.13	39.81

\*\*\*Discount Prices: 1-9 Net; 10-24 less 10%; 25-49 less 16%; 50-99 less 23%; 100-499 less 30%  
Ordering Instructions: No minimum. Net 30 days F.O.B. Mt. Vernon, New York.

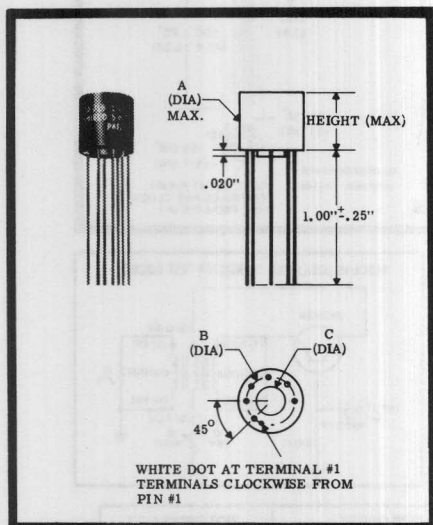
**PICO Electronics, Inc.**

453 N. MacQuesten Pkwy., Mt. Vernon, N.Y. 10552 • 914-699-5514 • FAX 914-699-5565



# PICO's miniature 400 Hz transformers

## 115V/26V Primary Printed Circuit Construction



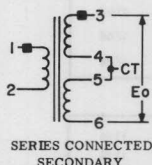
Case Size	Height (Max.)	A (Dia.) Max.	B (Dia.)	C (Dia.)	Terminal Dia.
L	.35	.51	.35	.218	.016 (.41)
N	.5	.51	.35	.218	.016 (.41)
R	.375	.75	.6	.475	.016 (.41)
S	.52	.75	.6	.475	.020 (.51)
T	.82	.75	.6	.475	.020 (.51)

### FEATURES

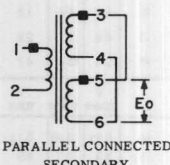
- 400 Hz Aerospace Application
- Smallest Possible Size
- Printed Circuit Plug-In Construction
- Secondary Has Split Winding (Secondary can Be Used at Half Voltage Twice the Current.)

### SPECIFICATIONS

- Manufactured to MIL-T-27 (TF5S03ZZ)
- 90°c Ambient
- Input Primary 115v-400 Hz ±20 Hz or 26V-400HZ±20 Hz (Your Choice-Just Choose The Proper Part No.)
- Regulation is 24% (T Units Have Regulation of 17%)
- Secondary Voltage Adjusted to Nominal Value at Half Load.



SERIES CONNECTED SECONDARY



PARALLEL CONNECTED SECONDARY

This Product is Patented

SEC/ VOLT	SEC/ CURRENT ma	SIZE	MODEL NUMBER 115V PRIMARY	MODEL NUMBER 26V PRIMARY	PICO PRICES 1-9*
5.0 CT	75	L	L-8948	L-8951	32.19
	150	N	N-8948	N-8951	32.19
	204	R	R-20650	R-20815	47.54
	338	S	S-21650	S-21815	42.28
	480	T	T-22650	T-22815	44.09
6.3 CT	59.5	L	L-8947	L-8952	32.19
	119	N	N-8947	N-8952	32.19
	162	R	R-20655	R-20820	47.54
	268	S	S-21655	S-21820	42.28
	381	T	T-22655	T-22820	44.09
8.0 CT	47	L	L-8946	L-8953	32.19
	94	N	N-8946	N-8953	32.19
	128	R	R-20660	R-20825	47.54
	211	S	S-21660	S-21825	42.28
	300	T	T-22660	T-22825	44.09
10 CT	37.5	L	L-8945	L-8954	32.19
	75	N	N-8945	N-8954	32.19
	102	R	R-20665	R-20830	47.54
	169	S	S-21665	S-21830	42.28
	240	T	T-22665	T-22830	44.09
12.8 CT	29	L	L-8940	L-8956	32.19
	58.6	N	N-8940	N-8956	32.19
	79.7	R	R-20670	R-20835	47.54
	132	S	S-21670	S-21835	42.28
	188	T	T-22670	T-22835	44.09
14 CT	26.8	L	L-8937	L-8957	32.19
	53.6	N	N-8937	N-8957	32.19
	72.9	R	R-20675	R-20840	47.54
	121	S	S-21675	S-21840	42.28
	171	T	T-22675	T-22840	44.09
16 CT	23	L	L-8935	L-8958	32.19
	47	N	N-8935	N-8958	32.19
	63.8	R	R-20680	R-20845	47.54
	106	S	S-21680	S-21845	42.28
	150	T	T-22680	T-22845	44.09
18 CT	20.8	L	L-8934	L-8959	32.19
	41.7	N	N-8934	N-8959	32.19
	56.7	R	R-20685	R-20850	47.54
	93.9	S	S-21685	S-21850	42.28
	133	T	T-22685	T-22850	44.09
20 CT	18.8	L	L-8933	L-8961	32.19
	37.5	N	N-8933	N-8961	32.19
	51	R	R-20690	R-20855	47.54
	84.5	S	S-21690	S-21855	42.28
	120	T	T-22690	T-22855	44.09
22 CT	17	L	L-8932	L-8962	32.19
	34	N	N-8932	N-8962	32.19
	46.4	R	R-20695	R-20860	47.54
	76.8	S	S-21695	S-21860	42.28
	109	T	T-22695	T-22860	44.09
24 CT	15.5	L	L-8930	L-8963	32.19
	31	N	N-8930	N-8963	32.19
	42.5	R	R-20700	R-20865	47.54
	70.4	S	S-21700	S-21865	42.28
	100	T	T-22700	T-22865	44.09
28 CT	13.4	L	L-8929	L-8964	32.19
	26.8	N	N-8929	N-8964	32.19
	36.4	R	R-20705	R-20870	47.54
	60.4	S	S-21705	S-21870	42.28
	85.7	T	T-22705	T-22870	44.09
31 CT	12	L	L-8927	L-8966	32.19
	24	N	N-8927	N-8966	32.19
	32.9	R	R-20710	R-20875	47.54
	54.5	S	S-21710	S-21875	42.28
	77.4	T	T-22710	T-22875	44.09
36 CT	10.4	L	L-8925	L-8967	32.19
	20.8	N	N-8925	N-8967	32.19
	28.3	R	R-20715	R-20880	47.54
	46.9	S	S-21715	S-21880	42.28
	66.7	T	T-22715	T-22880	44.09
39 CT	9.6	L	L-8924	L-8968	32.19
	19.2	N	N-8924	N-8968	32.19
	26.2	R	R-20720	R-20885	47.54
	43.3	S	S-21720	S-21885	42.28
	61.5	T	T-22720	T-22885	44.09

SEC/ VOLT	SEC/ CURRENT ma	SIZE	MODEL NUMBER 115V PRIMARY	MODEL NUMBER 26V PRIMARY	PICO PRICES 1-9*
43 CT	8.7	L	L-8923	L-8969	32.19
	17.4	N	N-8923	N-8969	32.19
	23.7	R	R-20725	R-20890	47.54
	39.3	S	S-21725	S-21890	42.28
	55.8	T	T-22725	T-22890	44.09
48 CT	7.8	L	L-8922	L-8971	32.19
	15.6	N	N-8922	N-8971	32.19
	21.1	R	R-20730	R-20895	47.54
	35.2	S	S-21730	S-21895	42.28
	50	T	T-22730	T-22895	44.09
56 CT	6.6	L	L-8920	L-8972	32.19
	13.2	N	N-8920	N-8972	32.19
	18.2	R	R-20735	R-20900	47.54
	30.2	S	S-21735	S-21900	42.28
	42.9	T	T-22735	T-22900	44.09
63 CT	6	L	L-8917	L-8973	32.19
	11.9	N	N-8917	N-8973	32.19
	16.2	R	R-20740	R-20905	47.54
	26.9	S	S-21740	S-21905	42.28
	38.2	T	T-22740	T-22905	44.09
68 CT	5.5	L	L-8915	L-8974	32.19
	11	N	N-8915	N-8974	32.19
	15	R	R-20745	R-20910	47.54
	24.9	S	S-21745	S-21910	42.28
	35.3	T	T-22745	T-22910	44.09
80 CT	4.6	L	L-8910	L-8976	32.19
	9.4	N	N-8910	N-8976	32.19
	12.1	R	R-20750	R-20915	47.54
	21.1	S	S-21750	S-21915	42.28
	30	T	T-22750	T-22915	44.09
88 CT	4.2	L	L-8905	L-8977	32.19
	8.5	N	N-8905	N-8977	32.19
	11.6	R	R-20755	R-20920	47.54
	19.2	S	S-21755	S-21920	42.28
	27.3	T	T-22755	T-22920	44.09
100 CT	3.7	L	L-8902	L-8978	32.19
	8.5	N	N-8902	N-8978	32.19
	10.2	R	R-20760	R-20925	47.54
	16.9	S	S-21760	S-21925	42.28
	24	T	T-22760	T-22925	44.09
115 CT	3.2	L	L-8900	L-8979	32.19
	6.5	N	N-8900	N-8979	32.19
	8.9	R	R-20765	R-20930	47.54
	14.7	S	S-21765	S-21930	42.28
	20.9	T	T-22765	T-22930	44.09
123 CT	8.3	R	R-20770	R-20935	47.54
	13.7	S	S-21770	S-21935	42.28
	19.5	T	T-22770	T-22935	44.09
138 CT	7.4	R	R-20775	R-20940	47.54
	12.2	S	S-21775	S-21940	42.28
	17.4	T	T-22775	T-22940	44.09
157 CT	6.5	R	R-20780	R-20945	47.54
	10.8	S	S-21780	S-21945	42.28
	15.3	T	T-22780	T-22945	44.09
175 CT	5.8	R	R-20785	R-20950	47.54
	9.6	S	S-21785	S-21950	42.28
	13.7	T	T-22785	T-22950	44.09
200 CT	5.1	R	R-20790	R-20955	47.54
	8.4	S	S-21790	S-21955	42.28
	12	T	T-22790	T-22955	44.09
220 CT	7.7	S	S-21795	S-21960	44.43
	10.9	T	T-22795	T-22960	46.32
250 CT	6.8	S	S-21800	S-21965	46.54
	9.6	T	T-22800	T-22965	48.53
275 CT	6.1	S	S-21805	S-21970	48.85
	8.7	T	T-22805	T-22970	52.95
310 CT	5.4	S	S-21810	S-21975	50.79
	7.7	T	T-22810	T-22975	57.00

Ordering Instructions: No minimum. Net 30 days  
F.O.B. Mt. Vernon, New York

\*Discount Prices: 1-9 Net; 10-24 less 10%; 25-49 less 16%;  
50-99 less 23%; 100-499 less 30%

For immediate engineering assistance or to place an order—Call Toll Free 800-431-1064

Delivery—  
stock to one week

## PICO Electronics, Inc.

453 N. MacQuesten Pkwy., Mt. Vernon, N.Y. 10552 • 914-699-5514 • FAX 914-699-5565

**H SERIES Plug-In**

$.250^{+.010}_{-.000}$  DIA  
 $(6.35^{+.025}_{-.000})$  DIA  
 $250^{+.010}_{-.000}$   
 $(6.35^{+.025}_{-.000})$   
 $.020^{+0}_{-.000}$  (Q51)  
 $1.00 \pm .25$   
 $(25.4 \pm 6.35)$   
 $.19$  DIA  
 $(4.8)$  DIA

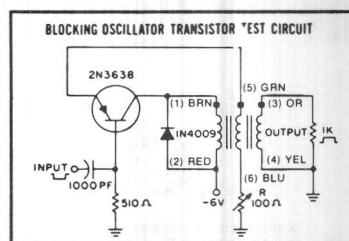
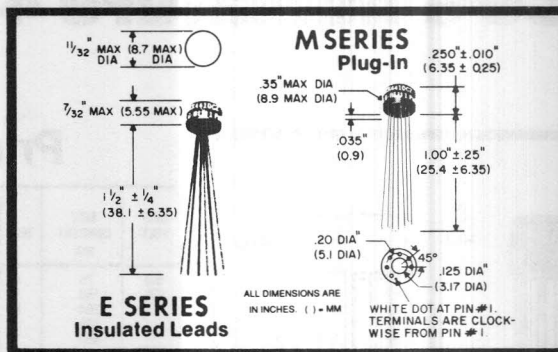
UNIT CAN BE SUPPLIED WITHOUT BARRIER

**J SERIES Insulated Leads**

$.250^{+.010}_{-.000}$  DIA  
 $(6.35^{+.025}_{-.000})$  DIA  
 $150 \pm .25$   
 $(38.1 \pm 6.35)$   
 $.125$  DIA  
 $(3.17)$  DIA

ALL DIMENSIONS ARE IN INCHES. ( ) = MM

\* WHITE DOT AT PIN #1  
TERMINALS ARE CLOCK-WISE FROM PIN #1.



PICO PART NUMBER		COUPLING CIRCUIT CHARACTERISTICS								BLOCKING OSCILLATOR CIRCUIT					PICO PRICES 1-9 *	
H-Series Plug-In	J-Series Insulated Leads	P Width μSec	Volt Out	Rise Time	% Over Shoot	Droop %	% Back Swing	Imp* in-out	P Width μSec	Rise Time	% Over Shoot	Droop %	% Back Swing	H-Series	J-Series	
H-5400	J-5600	0.05	0.2	0.01	0	0	20	50	0.05	0.01	0	0	35	22.94	20.44	
H-5405	J-5605	0.1	0.5	0.015	0	0	20	50	0.1	0.012	0	0	25	22.94	20.44	
H-5410	J-5610	0.2	1.2	0.02	0	0	20	100	0.2	0.02	0	0	15	22.94	20.44	
H-5415	J-5615	0.5	1.5	0.023	0	5	25	100	0.5	0.023	0	5	15	22.94	20.44	
H-5420	J-5620	1	1.5	0.025	0	20	28	100	1	0.03	0	10	15	22.94	20.44	
H-5425	J-5625	2	1.5	0.028	0	15	23	100	2	0.035	0	10	15	22.94	20.44	
H-5430	J-5630	3	1.5	0.030	0	15	28	100	3	0.04	0	10	15	22.94	20.44	
H-5435	J-5635	5	2	0.035	0	20	20	200	5	0.040	0	15	15	22.94	20.44	
H-5440	J-5640	10	2	0.05	0	25	25	200	10	0.060	0	15	10	22.94	20.44	
H-5445	J-5645	15	2	0.06	0	25	18	200	15	0.07	0	15	15	22.94	20.44	
H-5450	J-5650	25	3	0.1	0	30	30	500	25	0.08	0	15	15	22.94	20.44	
H-5455	J-5655	50	3	0.3	0	20	20	500	50	0.2	0	10	5	22.94	20.44	
H-5460	J-5660	100	6	0.4	0	15	18	500	100	0.35	0	10	15	22.94	20.44	

PICO PART NUMBER		COUPLING CIRCUIT CHARACTERISTICS								BLOCKING OSCILLATOR CIRCUIT					D. C. RESISTANCE			PICO PRICES 1-9 *	
F-Series Insulated Leads	M-Series Plug-in	P. WIDTH μSEC.	VOLT OUT	RISE TIME μSEC.	% OVER SHOOT	DROOP %	% BACK SWING	IMP IN/OUT	FREQ RESP. WITHIN 3 DB	P. WIDTH μSEC.	RISE TIME μSEC.	% OVER SHOOT	DROOP %	% BACK SWING	4 TNS RED	4 TNS ORF	1 TURN GRN BLU	F-Series	M-Series
E5020	M5300	0.05	10	0.018	0	0	10	50	150 KHz-30 MHz	0.05	0.02	0	0	35	0.21	0.23	0.13	15.87	17.66
E5040	M5305	0.1	10	0.02	0	0	5	50	100 KHz-17 MHz	0.1	0.025	0	0	25	0.47	0.56	0.17	15.87	17.66
E5060	M5310	0.2	8	0.035	0	0	5	100	16 KHz-10 MHz	0.2	0.030	0	0	15	1.0	1.25	0.37	15.87	17.66
E5080	M5315	0.5	8	0.06	0	0	0	100	7 KHz-3.3 MHz	0.5	0.05	0	0	15	1.5	1.80	0.54	15.87	17.66
E5100	M5320	1	8	0.15	0	0	5	100	7 KHz-2.3 MHz	1	0.08	0	0	15	2.5	3.1	0.9	15.87	17.66
E5120	M5325	2	8	0.17	0	0	10	100	2.2 KHz-1.3 MHz	2	0.10	0	0	15	3.0	3.7	1.1	15.87	17.66
E5140	M5330	3	8	0.20	0	0	10	100	1.7 KHz-1.5 MHz	3	0.20	0	0	15	4.9	6.0	1.8	15.87	17.66
E5160	M5335	5	8	0.20	0	15	25	200	1.8 KHz-1.5 MHz	5	0.30	0	0	3	8.0	9.7	2.9	15.87	17.66
E5180	M5340	10	8	0.4	0	15	20	200	1.5 KHz-1.2 MHz	10	0.35	0	5	10	13.0	15.8	4.7	15.87	17.66

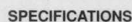
Material Description											Tons			Tons			Tons		
E5200	M3545	0.1	8	0.01	0	0	5	140/50	170 KHz-32 MHz	0.1	0.01	0	0	20	0.55	0.40	0.15	15.93	17.66
E5220	M5350	1	8	0.05	0	6	10	280/100	12.5 KHz-33 MHz	1	0.02	5	5	5	3.0	2.2	0.9	15.93	17.66
E5240	M5355	5	8	0.09	0	12	25	560/200	15 KHz-4 MHz	5	0.05	0	10	10	9.5	7.0	2.6	15.93	17.66

COUPLING CIRCUIT CHARACTERISTICS											PICO PRICES 1-9 *			
PICO PART NUMBER		P. WIDTH IN/SEC.	VOLT OUT	RISE TIME μSEC.	% OVER SHOOT	DROOP %	% BACK SWING	IMP IN/OUT	FREQ RESP. WITHIN 3 DB	4	4	4	E-Series	M-Series
E-Series Insulated Leads	M-Series Plug-in									TNS BRN RED	TNS OR YEL	4 TURNS GRN BLU		
E5181	M-5356	0.05	10	0.018	0	0	10	50	150 KHz-30 MHz	0.21	0.23	0.25	17.66	17.66
E5182	M-5357	0.1	10	0.02	0	0	5	50	100 KHz-17 MHz	0.47	0.56	0.67	17.66	17.66
E5183	M-5358	0.2	8	0.035	0	0	5	100	16 KHz-10 MHz	1.0	1.25	1.56	17.66	17.66
E5184	M-5359	0.5	8	0.06	0	0	0	100	7 KHz-3.3 MHz	1.5	1.80	2.2	17.66	17.66
E5185	M-5360	1	8	0.15	0	0	5	100	7 KHz-2.3 MHz	2.5	3.1	3.9	17.66	17.66
E5186	M-5361	2	8	0.17	0	0	10	100	2.2 KHz-1.3 MHz	3.0	3.7	4.6	17.66	17.66
E5187	M-5362	3	8	0.20	0	0	10	100	1.7 KHz-1.5 MHz	4.9	6.0	7.4	17.66	17.66
E5188	M-5363	5	8	0.20	0	15	25	200	1.8 KHz-1.5 MHz	8.0	9.7	11.8	17.66	17.66
E5189	M-5364	10	8	0.4	0	15	20	200	1.5 KHz-1.2 MHz	13.0	15.8	19.2	17.66	17.66

\*Discount Prices: 1-9 Net; 10-24 less 10%; 25-49 less 16%; 50-99 less 23%; 100-499 less 30%  
Ordering Instructions: No minimum. Net 30 days F.O.B. Mt. Vernon, New York.

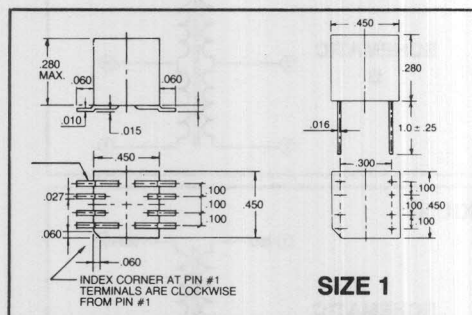
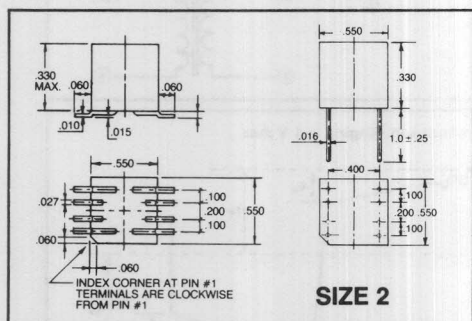
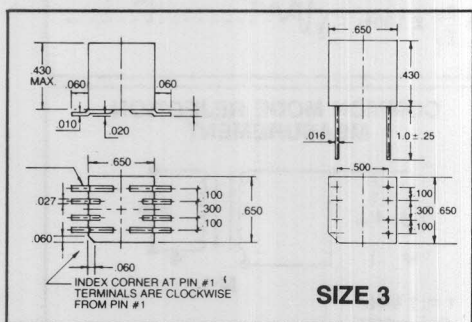
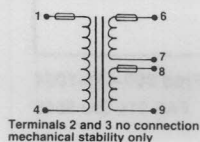


## PLUG-IN and SURFACE MOUNT



- Units manufactured to MIL-T-21038 TP75SXNNNNK2
- **DIELECTRIC STRENGTH:** .....  
All Units Tested at 500 V RMS.
- **INSULATION RESISTANCE:**.....  
Greater Than 10,000 Megohms at 700 V DC.
- **THERMAL SHOCK:** .....  
25 Cycles, Method 107C, MIL-STD-202E, Test Condition A-1.
- **OPERATING TEMPERATURE:**  
-55° c to +130° c).
- **TERMINALS:** Meet solderability per MIL-STD-202 Method 208
- PLUG-IN:** Solid .016 Diameter  
Conductor. Conductor is copper clad steel, Tinned 100%. Electroplated  
Per MIL-T-10727A and ASTM CCS B452
- SURFACE MOUNT:** Conductor is copper clad steel, Tin Dipped.
- WEIGHT SIZE:** 1-2.5 Grams  
2-4.5 Grams  
3-8.0 Grams

THIS PRODUCT IS PATENTED

**SIZE 1****SIZE 2****SIZE 3**

**Delivery—  
stock to one week**

PICO PART # PLUG-IN	PICO PART # SURFACE MOUNT	TURNS RATIO TOLER. ±5%	Lm μH TYPICAL	LEAKAGE IND. VALUE IN μl TYPICAL		WINDING RESISTANCE MAX VALUE IN OHMS			TYPICAL INTER- WINDING CAP VALUE IN pF		E.T. RATING VOLT-μsec MIN. PRIMARY	PRICE 1-9	
				LL (N1-N2)	LL (N1-N3)	R(N1)	R(N2)	R(N3)	C1 (N1-N2)	C2 (N1-N3)		PLUG-IN	S. MOUNT
74005	75005	1:1:1	150	100	250	.070	.080	.085	25	12	10	14.95	17.95
74010	75010	1:1:1	600	400	1.1	.15	.18	.21	25	12	20	14.95	17.95
74015	75015	1:1:1	1300	900	2.5	.45	.51	.58	25	12	30	14.95	17.95
74020	75020	1:1:1	2400	1.6	4.2	1.14	1.27	1.39	25	12	40	14.95	17.95
74025	75025	1:1:1	3700	3.0	6.5	2.0	2.3	2.5	25	12	50	14.95	17.95
74030	75030	2:1:1	150	250	.450	.062	.014	.014	235	12	10	14.95	17.95
74035	75035	2:1:1	600	1.0	1.5	.15	.074	.087	25	12	20	14.95	17.95
74040	75040	2:1:1	1300	1.5	3.5	.45	.10	.13	25	12	30	14.95	17.95
74045	75045	2:1:1	2400	2.2	6.0	1.14	.17	.20	25	12	40	14.95	17.95
74050	75050	2:1:1	3700	3.4	9.0	2.07	.29	.32	25	12	50	14.95	17.95
74055	75055	2:1:1	200	.617	1.0	.081	.018	.018	25	12	12	14.95	17.95
74060	75060	2:1:1	800	1.2	1.5	.18	.035	.040	25	12	24	14.95	17.95
74065	75065	2:1:1	1800	2.5	5.0	.37	.15	.16	25	12	36	14.95	17.95
74070	75070	2:1:1	3200	4.5	10.0	.62	.25	.28	25	12	48	14.95	17.95
74075	75075	2:1:1	5300	7.0	15.0	1.28	.25	.28	25	12	60	14.95	17.95
74080	75080	3:3:1	200	200	1.0	.082	.096	.025	25	12	12	14.95	17.95
74085	75085	3:3:1	800	1.0	1.5	.18	.022	.042	25	12	24	14.95	17.95
74090	75090	3:3:1	1800	2.5	5.0	.58	.73	.28	25	12	36	14.95	17.95
74095	75095	3:3:1	3200	4.5	10.0	.95	1.18	.55	25	12	48	14.95	17.95
74100	75100	3:3:1	5300	7.0	15.0	1.56	1.78	.69	25	12	60	14.95	17.95
74105	75105	4:2:1	200	.506	2.0	.047	-.024	.019	25	12	12	14.95	17.95
74110	75110	4:2:1	800	1.5	3.0	.18	.071	.041	25	12	24	14.95	17.95
74115	75115	4:2:1	1800	3.0	5.5	.46	.28	.16	25	12	36	14.95	17.95
74120	75120	4:2:1	3200	5.5	10.0	.77	.46	.25	25	12	48	14.95	17.95
74125	75125	4:2:1	5300	8.0	15.0	1.25	.72	.40	25	12	60	14.95	17.95

PICO PART # PLUG-IN	PICO PART # SURFACE MOUNT	TURNS RATIO TOLER. ±5%	Lm TYPICAL	LEAKAGE IND. VALUE IN µA TYPICAL		WINDING RESISTANCE MAX VALUE IN OHMS			TYPICAL INTER- WINDING CAP VALUE IN pF		E.T. RATING VOLT-µsec MIN. PRIMARY	PRICE 1-9	
				LL (N1-N2)	LL (N1-N3)	R(N1)	R(N2)	R(N3)	C1 (N1-N2)	C2 (N1-N3)		P.LUG-IN	S. MOUNT
74210	75210	1:1:1	250	350	712	038	046	048	35	18	16	14.95	17.95
74215	75215	1:1:1	1000	650	1.2	12	15	17	35	18	32	14.95	17.95
74220	75220	1:1:1	2250	1.5	3.0	28	32	37	35	18	48	14.95	17.95
74225	75225	1:1:1	4000	2.5	5.0	59	66	74	35	18	65	14.95	17.95
74230	75230	1:1:1	6000	4.0	8.0	27	148	1.56	35	18	80	14.95	17.95
74235	75235	2:1:1	250	400	815	038	014	015	35	18	16	14.95	17.95
74240	75240	2:1:1	1000	800	1.6	12	044	049	35	18	32	14.95	17.95
74245	75245	2:1:1	2250	1.8	3.6	28	11	13	35	18	48	14.95	17.95
74250	75250	2:1:1	4000	3.2	6.4	59	17	20	35	18	65	14.95	17.95
74255	75255	2:1:1	6000	5.0	10.0	26	29	31	35	18	80	14.95	17.95
74260	75260	3:1:1	350	400	900	036	017	023	35	18	19	14.95	17.95
74265	75265	3:1:1	1400	1.1	2.2	15	035	039	35	18	38	14.95	17.95
74270	75270	3:1:1	3000	2.4	5.0	42	062	068	35	18	57	14.95	17.95
74275	75275	3:1:1	5500	4.2	8.0	75	23	24	35	18	76	14.95	17.95
74280	75280	3:1:1	9000	6.5	10.0	102	39	41	35	18	85	14.95	17.95
74285	75285	3:3:1	350	450	1.0	063	068	049	35	18	19	14.95	17.95
74290	75290	3:3:1	1400	1.2	2.6	15	17	065	35	18	38	14.95	17.95
74295	75295	3:3:1	3000	2.5	5.0	42	048	089	35	18	57	14.95	17.95
74300	75300	3:3:1	5500	4.5	9.0	94	1.14	43	35	18	76	14.95	17.95
74305	75305	3:3:1	9000	7.0	14.0	154	1.74	64	35	18	95	14.95	17.95
74310	75310	4:2:1	350	700	1.64	040	023	014	35	18	19	14.95	17.95
74315	75315	4:2:1	1400	1.3	2.7	12	067	035	35	18	38	14.95	17.95
74320	75320	4:2:1	3000	2.7	5.5	42	12	070	35	18	57	14.95	17.95
74325	75325	4:2:1	5500	4.8	9.0	94	27	15	35	18	76	14.95	17.95
74330	75330	4:2:1	9000	7.5	15.0	153	35	10	35	18	95	14.95	17.95

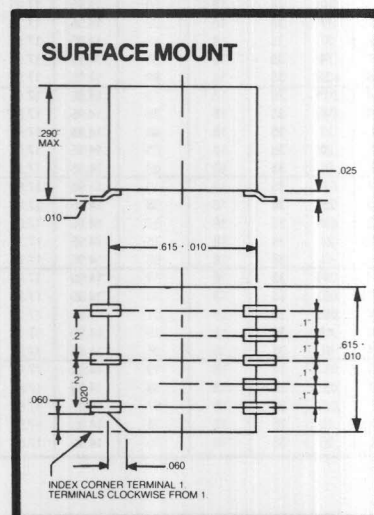
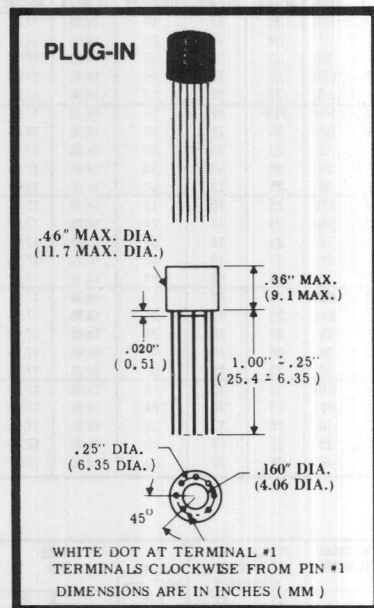
PICO PART # PLUG-IN	PICO PART # SURFACE MOUNT	TURNS RATIO TOLER. ±%	Lm TYPICAL μH	LEAKAGE IND. VALUE IN μH TYPICAL		WINDING RESISTANCE MAX VALUE IN OHMS			TYPICAL INTER- WINDING CAP VALUE IN pF		E.T. RATING VOLT-μsec MIN. PRIMARY	PRICE 1-9	
				LL (N1-N2)	LL (N1-N3)	R(N1)	R(N2)	R(N3)	C1 (N1-N2)	C2 (N1-N3)		PLUG-IN	S. MOUNT
74515	75515	1:1:1	300	300	400	.044	.048	.054	45	25	25	14.95	17.95
74520	75520	1:1:1	1200	1.25	1.9	.095	.11	.13	45	25	50	14.95	17.95
74525	75525	1:1:1	2700	1.75	4.2	.22	.26	.29	45	25	75	14.95	17.95
74530	75530	1:1:1	4800	3.0	7.3	.46	.52	.59	45	25	100	14.95	17.95
74535	75535	1:1:1	7500	4.6	11.4	.81	.90	.99	45	25	125	14.95	17.95
74540	75540	2:1:1	300	.514	.630	.044	.013	.017	45	25	25	14.95	17.95
74545	75545	2:1:1	1200	.900	1.7	.095	.043	.047	45	25	50	14.95	17.95
74550	75550	2:1:1	2700	2.0	3.7	.22	.10	.12	45	25	75	14.95	17.95
74555	75555	2:1:1	4800	3.0	6.5	.46	.17	.19	45	25	100	14.95	17.95
74560	75560	2:1:1	7500	4.88	10.0	.80	.28	.34	45	25	125	14.95	17.95
74565	75565	3:1:1	400	.686	.800	.049	.011	.011	45	25	30	14.95	17.95
74570	75570	3:1:1	1600	1.25	3.0	.12	.035	.038	45	25	60	14.95	17.95
74575	75575	3:1:1	3600	2.75	6.5	.33	.062	.068	45	25	90	14.95	17.95
74580	75580	3:1:1	6400	4.6	1.20	.58	.14	.15	45	25	120	14.95	17.95
74585	75585	3:1:1	10000	7.2	18.0	1.25	.13	.15	45	25	150	14.95	17.95
74590	75590	3:1:1	400	.400	1.02	.062	.072	.012	45	25	30	14.95	17.95
74595	75595	3:1:1	1600	1.25	1.5	.12	.14	.040	45	25	60	14.95	17.95
74600	75600	3:1:1	3600	3.0	2.9	.33	.38	.070	45	25	90	14.95	17.95
74605	75605	3:1:1	6400	5.3	5.0	.58	.73	.18	45	25	120	14.95	17.95
74610	75610	3:1:1	10000	8.2	7.8	1.35	.140	.20	45	25	150	14.95	17.95
74615	75615	4:2:1	400	.580	1.12	.054	.016	.009	45	25	30	14.95	17.95
74620	75620	4:2:1	1600	1.2	3.0	.12	.052	.028	45	25	60	14.95	17.95
74625	75625	4:2:1	3600	2.75	7.0	.33	.15	.084	45	25	90	14.95	17.95
74630	75630	4:2:1	6400	4.6	12.0	.58	.14	.080	45	25	120	14.95	17.95
74635	75635	4:2:1	10000	7.1	19.6	1.22	.27	.15	45	25	150	14.95	17.95

# PICO Electronics, Inc.

453 N. MacQuesten Pkwy., Mt. Vernon, N.Y. 10552 • 914-699-5514 • FAX 914-699-5565



# MIL-STD-1553 Interface Transformers Multiplex Data BUS Pulse Transformers



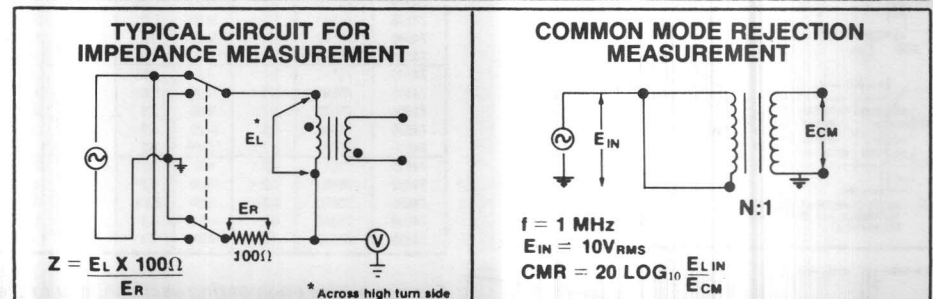
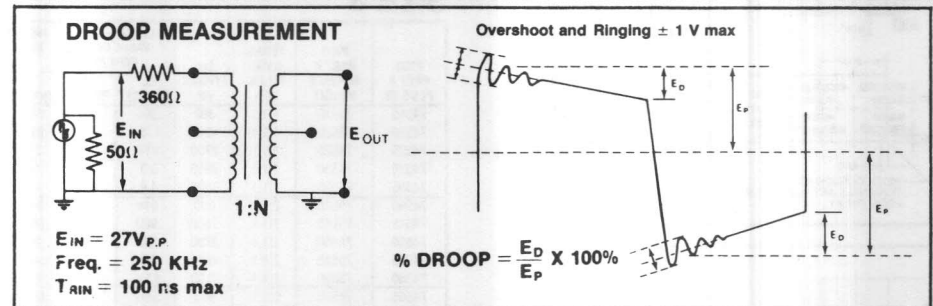
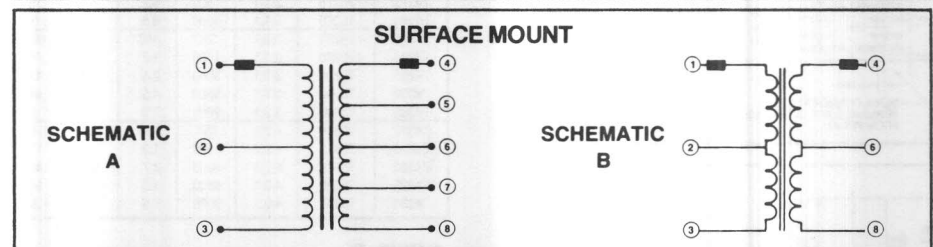
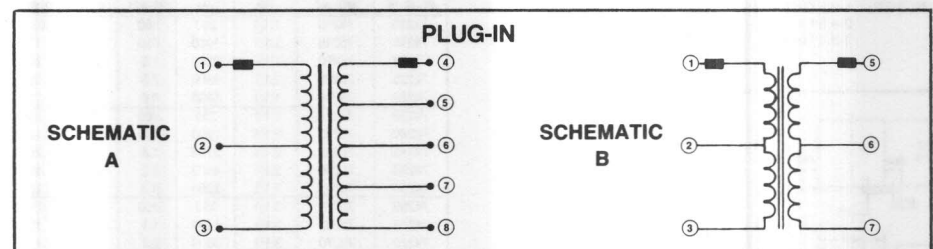
## SPECIFICATIONS:

- Units manufactured to MIL-T-21038 and MIL STD 1553
- IMPEDANCE greater than 3KΩ over the band from 75kHz to 1MHz
- DROOP 20% max.
- OVERSHOOT 1V peak
- COMMON MODE REJECTION (CMR) greater than 45dB.
- DIELECTRIC STRENGTH: All Units Tested at 200 V RMS.
- INSULATION RESISTANCE Greater Than 10,000 Megohms at 300 V DC.
- WEIGHT: ... PLUG-IN 4 Grams.  
SURFACE MOUNT 5 Grams.
- OPERATING TEMPERATURE: ... -55°C to +130°C.
- TERMINALS: Meet solderability per MIL-STD-202 Method 208  
PLUG-IN: Solid .012 Diameter Conductor. Conductor is copper clad steel, Tinned 100%. Electroplated Per MIL-T-10727A and ASTM CCS B452.  
SURFACE MOUNT: Conductor is copper clad steel, Tin Dipped.

These pulse transformers manufactured to MIL-STD-1553 COMMAND/RESPONSE MULTIPLEX DATA BUS requirements. They also are manufactured to MIL-T-21038 specifications and are designed to meet MAC AIR SPECIFICATIONS A3818, A5690, A5232 and A4905.

All of these transformers exhibit superior electrical performance. Common mode rejection ratio is greater than 45dB at 1 MHz. Input impedance is greater than 3000 ohms over the band from 75 kHz to 1MHz at 1V rms. This series possesses exceptional waveform integrity: Rise time and fall time is less than 100 nanoseconds. Overshoot and ringing is less than ± 1V peak. Droop is less than 20%.

PICO PART NUMBER		TURNS RATIO	PRIMARY	SECONDARY	% DROOP (Typical)	CMR dB (Typical)	SCHEMATIC	PRICE (1-9)
PLUG-IN	SURFACE MOUNT							
68010	68110	1CT:1CT 1CT:.707CT	1-3 1-3	4-8 5-7	10	50	A	33.67
68020	68120	1.4CT:1CT 2CT:1CT	1-3 1-3	4-8 5-7	10	50	A	33.67
68030	68130	1.25CT:1CT 1.66CT:1CT	1-3 1-3	4-8 5-7	10	50	A	33.67
68040	68140	2.3CT:1CT 3.2CT:1CT	1-3 1-3	4-8 5-7	10	50	A	33.67
68050	68150	1CT:1CT	1-3	5-7	10	50	B	27.76
68060	68160	1CT:1.41CT	1-3	5-7	10	50	B	27.76
68070	68170	1CT:1.66CT	1-3	5-7	10	50	B	27.76
68080	68180	1CT:2CT	1-3	5-7	10	50	B	27.76



# QPL Standards

## These Units Meet MIL-T-21038/27C, Type TP7SXNNNNKZ

### SPECIFICATIONS:

• These units are in strict compliance to MIL-T-21038/27C, type TP7SXNNNNKZ

• **IMPEDANCE** ..... Minimum value shown in table. These values will be met from 75 kHz to 1MHz over temp. range of -55°C to +130°C

• **DROOP** ..... 20% max.

• **OVERSHOOT** ..... 1V peak

• **COMMON MODE REJECTION (CMR)** 45dB minimum

• **DIELECTRIC WITHSTANDING** ..... 100 VRMS

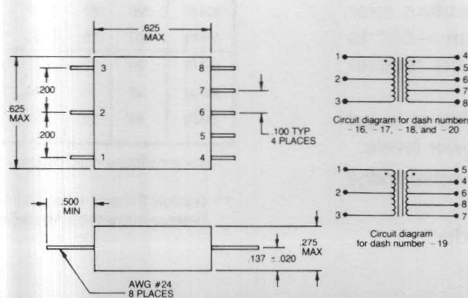
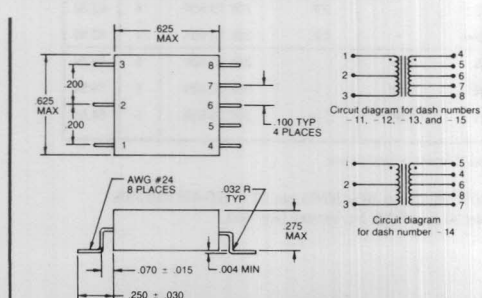
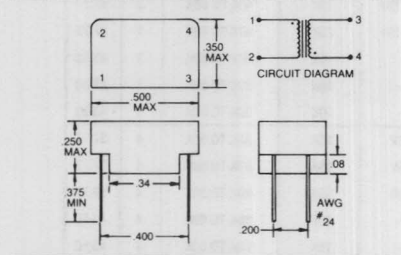
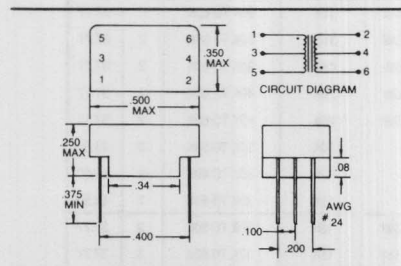
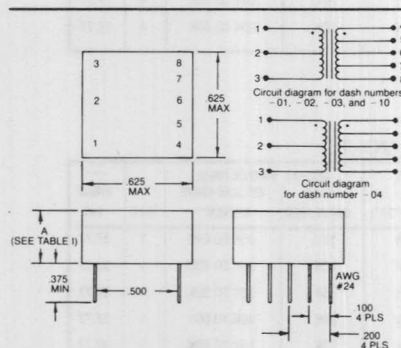
• **INSULATION RESISTANCE** ..... 1K megohms min. at 100 VDC

• **WEIGHT** ..... 5 grams max.

• **CASE** ..... epoxy

### QPL STANDARDS ELECTRICAL CHARACTERISTICS AND DIMENSIONS

PICO PART NUMBER	TURNS RATIO	PRIMARY	SECONDARY	DC RESISTANCE OHMS (MAX)	IMPEDANCE OHMS (MIN)	CONFIGURATION	"A" MAX	LINE REGULATION MIL-T-21038/27C	PICO PRICE 1-24
68201	1:1 ±3% 1:707 ±3%	1-3 1-3	4-8 5-7	1-3 3.0 4-8 3.0	(1-3) 4,000	A	.300	-01	57.50
68206	1.4:1 ±3% 2:1 ±3%	1-3 1-3	4-8 5-7	1-3 3.5 4-8 3.0	(1-3) 7,200	A	.250	-02	57.50
68211	1.25:1 ±3%	1-3	4-8	1-3 3.2	(1-3)				
68216	1.66:1 ±3%	1-3	5-7	4-8 3.0	4,000	A	.250	-03	57.50
68215	2.3:1 ±3% 3.2:1 ±3%	4-8 5-7	1-3 1-3	1-3 1.2 4-8 3.0	(5-7) 3,000	A	.300	-04	57.50
68221	1:1.41 ±3%	1-2	3-4	1-2 2.2 3-4 2.7	(3-4) 3,000	C	---	-05	41.99
68226	1:1 ±3%	1-5	2-6	1-5 2.5 2-6 2.8	(1-5) 3,000	B	---	-06	43.99
68231	1:1.41 ±3%	1-5	2-6	1-5 2.2 2-6 2.7	(2-6) 3,000	B	---	-07	43.99
68235	1:1.66 ±3%	1-5	2-6	1-5 1.5 2-6 2.4	(2-6) 3,000	B	---	-08	43.99
68241	1:2 ±3%	1-5	2-6	1-5 1.3 2-6 2.6	(2-6) 3,000	B	---	-09	43.99
68246	2.12:1 ±3% 1.5:1 ±3%	4-8 5-7	1-3 1-3	1-3 1.0 4-8 3.5	(4-8) 4,000	A	.250	-10	57.50
68251	1:1 ±3% 1:707 ±3%	1-3 1-3	4-8 5-7	1-3 3.0 4-8 3.0	(1-3) 4,000	D	---	-11	67.50
68256	1.4:1 ±3% 2:1 ±3%	1-3 1-3	4-8 5-7	1-3 3.5 4-8 3.0	(1-3) 7,200	D	---	-12	67.50
68261	1.25:1 ±3% 1.66:1 ±3%	1-3 1-3	4-8 5-7	1-3 3.2 4-8 3.0	(1-3) 4,000	D	---	-13	67.50
68265	2.3:1 ±3% 3.2:1 ±3%	4-8 5-7	1-3 1-3	1-3 1.2 4-8 3.0	(5-7) 3,000	D	---	-14	67.50
68271	2.12:1 ±3% 1.5:1 ±3%	4-8 5-7	1-3 1-3	1-3 1.0 4-8 3.5	(4-8) 4,000	D	---	-15	67.50
68276	1:1 ±3% 1:707 ±3%	1-3 1-3	4-8 5-7	1-3 3.0 4-8 3.0	(1-3) 4,000	E	---	-16	67.50
68281	1.4:1 ±3% 2:1 ±3%	1-3 1-3	4-8 5-7	1-3 3.5 4-8 3.0	(1-3) 7,200	E	---	-17	67.50
68286	1.25:1 ±3% 1.66:1 ±3%	1-3 1-3	4-8 5-7	1-3 3.2 4-8 3.0	(1-3) 4,000	E	---	-18	67.50
68291	2.3:1 ±3% 3.2:1 ±3%	4-8 5-7	1-3 1-3	1-3 1.2 4-8 3.0	(5-7) 3,000	E	---	-19	67.50
68295	2.12:1 ±3% 1.5:1 ±3%	4-8 5-7	1-3 1-3	1-3 1.0 4-8 3.5	(4-8) 4,000	E	---	-20	67.50



**PICO**  
**Electronics, Inc.**

453 N. MacQuesten Pkwy.  
Mt. Vernon, N.Y. 10552

914-699-5514  
FAX 914-699-5565

For immediate engineering assistance or to place an order—Call Toll Free 800-431-1064

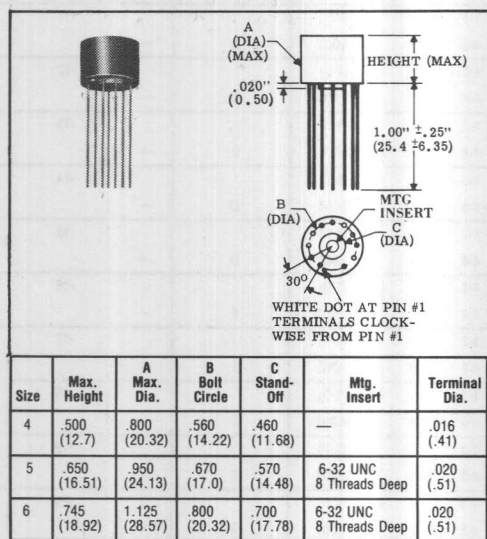
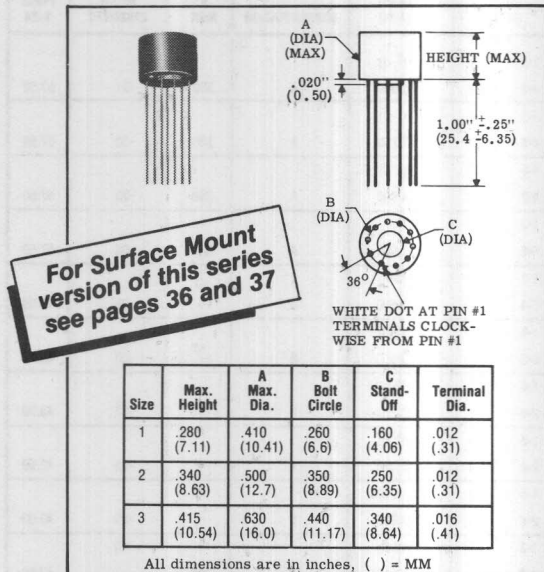
# Ultra Miniature DC-DC Converter Transformers

## Input Voltages of: 5V, 12V, 24V and 48V

### Power Levels up to 40 Watts

#### All units are magnetically shielded

All units can be supplied with higher or lower output voltages.  
Delivery-stock to one week, special voltages 9 days.



#### FEATURES

- Units can be used as self-saturating or for linear switching applications. Operation over ambient temperature range from  $-55^{\circ}$  to  $+105^{\circ}\text{C}$ . All units manufactured to the requirements of MIL-T-27 (TF5S40ZZ)
- All units can be supplied with higher or lower secondary voltages at the same power levels.
- Secondary can be connected for full-wave bridge or dual bridge.
- All units are magnetically shielded.

#### INPUT 5 VOLTS

PART NUMBER	D. C. OUT VOLTS			MAX. POWER OUT		APPROX. SWITCH FREQ.		SIZE	*** PRICE 1-9
	BRIDGE	FULL WAVE	DUAL BRIDGE	-55°C-+105°C	-55°C-+70°C	SELF-SATURATED	SQUARE-WAVE DRIVEN**		
31021	10	5	±5	1.5W	3W	15K	30K TO 60K	1	37.77
31041	12	6	±6	1.5W	3W	15K	30K TO 60K	1	37.77
31061	28	14	±14	1.5W	3W	15K	30K TO 60K	1	37.77
31081	48	24	±24	1.5W	3W	20K	40K TO 60K	1	37.77
31101	100	50	±50	1.5W	3W	20K	40K TO 60K	1	37.77
32106	10	5	±5	3W	4.5W	15K	30K TO 60K	2	37.77
32126	12	6	±6	3W	4.5W	15K	30K TO 60K	2	37.77
32146	28	14	±14	3W	4.5W	15K	30K TO 60K	2	37.77
32166	48	24	±24	3W	4.5W	20K	40K TO 60K	2	37.77
32186	100	50	±50	3W	4.5W	20K	40K TO 60K	2	37.77
32189	150	75	±75	3W	—	10K	30K TO 60K	2	43.50
32192	200	100	±100	3W	—	10K	30K TO 60K	2	43.50
32195	300	150	±150	3W	—	10K	30K TO 60K	2	43.50
33104	10	5	±5	5W	7.5W	10K	20K TO 50K	3	37.77
33124	12	6	±6	5W	7.5W	10K	20K TO 50K	3	37.77
33144	28	14	±14	5W	7.5W	10K	20K TO 50K	3	37.77
33164	48	24	±24	5W	7.5W	10K	20K TO 50K	3	37.77
33184	100	50	±50	5W	7.5W	10K	20K TO 50K	3	37.77
33187	150	75	±75	5W	—	10K	30K TO 60K	3	43.50
33190	200	100	±100	5W	—	10K	30K TO 60K	3	43.50
33193	300	150	±150	5W	—	10K	30K TO 60K	3	43.50
34501	10	5	±5	10W	14W	10K	20K TO 40K	4	37.77
34521	28	14	±14	10W	14W	10K	20K TO 40K	4	37.77
34541	40	24	±24	10W	14W	10K	20K TO 40K	4	37.77

\*\* Lower switching frequency may be used at lower output power.

#### INPUT 12 VOLTS

PART NUMBER	D. C. OUT VOLTS			MAX. POWER OUT		APPROX. SWITCH FREQ.		SIZE	*** PRICE 1-9
	BRIDGE	FULL WAVE	DUAL BRIDGE	-55°C-+105°C	-55°C-+70°C	SELF-SATURATED	SQUARE-WAVE DRIVEN**		
31121	12	6	±6	1.5W	3W	15K	30K TO 60K	1	37.77
31141	24	12	±12	1.5W	3W	15K	30K TO 60K	1	37.77
31161	28	14	±14	1.5W	3W	15K	30K TO 60K	1	37.77
31181	48	24	±24	1.5W	3W	20K	40K TO 60K	1	37.77
31201	100	50	±50	1.5W	3W	20K	40K TO 60K	1	37.77
32206	12	6	±6	3W	4.5W	15K	30K TO 60K	2	37.77
32226	24	12	±12	3W	4.5W	15K	30K TO 60K	2	37.77
32246	28	14	±14	3W	4.5W	15K	30K TO 60K	2	37.77
32266	48	24	±24	3W	4.5W	20K	40K TO 60K	2	37.77
32286	100	50	±50	3W	4.5W	20K	40K TO 60K	2	37.77
32289	150	75	±75	3W	—	10K	30K TO 60K	2	43.50
32292	200	100	±100	3W	—	10K	30K TO 60K	2	43.50
32295	300	150	±150	3W	—	10K	30K TO 60K	2	43.50
33204	12	6	±6	5W	7.5W	15K	30K TO 60K	3	37.77
33224	28	14	±14	5W	7.5W	15K	30K TO 60K	3	37.77
33244	48	24	±24	5W	7.5W	20K	40K TO 60K	3	37.77
33264	100	50	±50	5W	7.5W	20K	40K TO 60K	3	37.77
33267	150	75	±75	5W	—	10K	30K TO 60K	3	43.50
33270	200	100	±100	5W	—	10K	30K TO 60K	3	43.50
33273	300	150	±150	5W	—	10K	30K TO 60K	3	43.50
34561	24	12	±12	10W	14W	15K	30K TO 50K	4	37.77
34581	28	14	±14	10W	14W	15K	30K TO 50K	4	37.77
34601	48	24	±24	10W	14W	15K	30K TO 50K	4	37.77
34604	100	50	±50	7.5W	—	10K	30K TO 60K	4	43.50
34607	150	75	±75	7.5W	—	10K	30K TO 60K	4	43.50
34610	200	100	±100	7.5W	—	10K	30K TO 60K	4	43.50
34613	300	150	±150	7.5W	—	10K	30K TO 60K	4	43.50
35110	24	12	±12	17W	25W	—	30K TO 60K	5	54.34
35130	28	14	±14	17W	25W	—	30K TO 60K	5	54.34
35150	48	24	±24	17W	25W	—	30K TO 60K	5	54.34

\*\* Lower switching frequency may be used at lower output power.

\*\*\*Discount Prices: 1-9 Net; 10-24 less 10%; 25-49 less 16%; 50-99 less 23%; 100-499 less 30%  
Ordering Instructions: No minimum. Net 30 days F.O.B. Mt. Vernon, New York.

For immediate engineering assistance or to place an order—Call Toll Free 800-431-1064 • 914-699-5514 • FAX 914-699-5565



# INPUT 24 VOLTS

PART NUMBER	D. C. OUT VOLTS			MAX. POWER OUT		APPROX. SWITCH FREQ. SELF-SATURATED	SQUARE-WAVE DRIVEN**	SIZE	*** PRICE 1-9
	BRIDGE	FULL WAVE	DUAL BRIDGE	-55°C-+105°C	-55°C-+70°C				
31221	10	5	±5	1.5W	3W	15K	30K TO 60K	1	37.77
31241	28	14	±14	1.5W	3W	15K	30K TO 60K	1	37.77
31261	48	24	±24	1.5W	3W	20K	40K TO 60K	1	37.77
31281	100	50	±50	1.5W	3W	20K	40K TO 60K	1	37.77
32306	10	5	±5	3W	4.5W	15K	30K TO 60K	2	37.77
32326	28	14	±14	3W	4.5W	15K	30K TO 60K	2	37.77
32346	48	24	±24	3W	4.5W	20K	40K TO 60K	2	37.77
32366	100	50	±50	3W	4.5W	20K	40K TO 60K	2	37.77
32369	150	75	±75	3W	-	10K	30K TO 60K	2	43.50
32372	200	100	±100	3W	-	10K	30K TO 60K	2	43.50
32375	300	150	±150	3W	-	10K	30K TO 60K	2	43.50
33284	10	5	±5	5W	7.5W	15K	30K TO 60K	3	37.77
33304	28	14	±14	5W	7.5W	15K	30K TO 60K	3	37.77
33324	48	24	±24	5W	7.5W	20K	40K TO 60K	3	37.77
33344	100	50	±50	5W	7.5W	20K	40K TO 60K	3	37.77
33347	150	75	±75	5W	-	10K	30K TO 60K	3	43.50
33350	200	100	±100	5W	-	10K	30K TO 60K	3	43.50
33353	300	150	±150	5W	-	10K	30K TO 60K	3	43.50
34621	28	14	±14	10W	14W	15K	30K TO 50K	4	37.77
34641	48	24	±24	10W	14W	15K	30K TO 50K	4	37.77
34644	100	50	±50	7.5W	-	10K	30K TO 60K	4	43.50
34647	150	75	±75	7.5W	-	10K	30K TO 60K	4	43.50
34650	200	100	±100	7.5W	-	10K	30K TO 60K	4	43.50
34653	300	150	±150	7.5W	-	10K	30K TO 60K	4	43.50
35170	24	12	±12	17W	25W	-	30K TO 60K	5	54.34
35190	28	14	±14	17W	25W	-	30K TO 60K	5	54.34
35210	48	24	±24	17W	25W	-	30K TO 60K	5	54.34
36710	48	24	±24	25W	40W	-	30K TO 60K	6	65.39
36730	56	28	±28	25W	40W	-	30K TO 60K	6	65.39

\*\* Lower switching frequency may be used at lower output power.

# INPUT 48 VOLTS

PART NUMBER	D. C. OUT VOLTS			MAX. POWER OUT		APPROX. SWITCH FREQ. SELF-SATURATED	SQUARE-WAVE DRIVEN**	SIZE	*** PRICE 1-9
	BRIDGE	FULL WAVE	DUAL BRIDGE	-55°C-+105°C	-55°C-+70°C				
31301	24	12	±12	1.5W	3W	15K	30K TO 60K	1	32.99
31321	48	24	±24	1.5W	3W	20K	40K TO 60K	1	32.99
31341	100	50	±50	1.5W	3W	20K	40K TO 60K	1	32.99
31361	150	75	±75	1.5W	3W	20K	40K TO 60K	1	32.99
32386	24	12	±12	3W	4.5W	15K	30K TO 60K	2	32.99
32406	48	24	±24	3W	4.5W	20K	40K TO 60K	2	32.99
32426	100	50	±50	3W	4.5W	20K	40K TO 60K	2	32.99
32446	150	75	±75	3W	4.5W	20K	40K TO 60K	2	32.99
32449	200	100	±100	3W	4.5W	10K	30K TO 60K	2	38.00
32452	300	150	±150	3W	4.5W	10K	30K TO 60K	2	38.00
33364	24	12	±12	5W	7.5W	15K	30K TO 60K	3	32.99
33384	48	24	±24	5W	7.5W	20K	40K TO 60K	3	32.99
33404	100	50	±50	5W	7.5W	20K	40K TO 60K	3	32.99
33424	150	75	±75	5W	7.5W	20K	40K TO 60K	3	32.99
33427	200	100	±100	5W	-	10K	30K TO 60K	3	38.00
33430	300	150	±150	5W	-	10K	30K TO 60K	3	38.00
34661	24	12	±12	10W	14W	15K	30K TO 50K	4	32.99
34681	48	24	±24	10W	14W	15K	30K TO 50K	4	32.99
34701	56	28	±28	10W	14W	15K	30K TO 50K	4	32.99
34704	100	50	±50	7.5W	-	10K	30K TO 60K	4	38.00
34707	150	75	±75	7.5W	-	10K	30K TO 60K	4	38.00
34710	200	100	±100	7.5W	-	10K	30K TO 60K	4	38.00
34713	300	150	±150	7.5W	-	10K	30K TO 60K	4	38.00
35230	24	12	±12	17W	25W	-	30K TO 60K	5	47.47
35250	48	24	±24	17W	25W	-	30K TO 60K	5	47.47
35270	56	28	±28	17W	25W	-	30K TO 60K	5	47.47
36750	48	24	±24	25W	40W	-	30K TO 60K	6	57.12
36770	56	28	±28	25W	40W	-	30K TO 60K	6	57.12
36790	100	50	±50	25W	40W	-	30K TO 60K	6	57.12

\*\* Lower switching frequency may be used at lower output power.

\*\*\* Discount Prices: 1-9 Net; 10-24 less 10%; 25-49 less 16%; 50-99 less 23%; 100-499 less 30%

Ordering Instructions: No minimum. Net 30 days F.O.B. Mt. Vernon, New York

**PICO Electronics, Inc.**

453 N. MacQuesten Pkwy., Mt. Vernon, N.Y. 10552

• 914-699-5514 • FAX 914-699-5565

## SCHEMATIC FOR SIZES 1, 2 & 3 USING TRANSFORMERS AS SELF-SATURATING

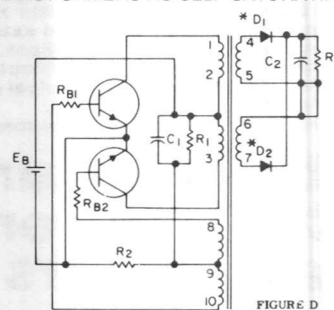


FIGURE D

## SCHEMATIC FOR SIZES 1, 2, AND 3 USING TRANSFORMERS AS LINEAR SWITCHING

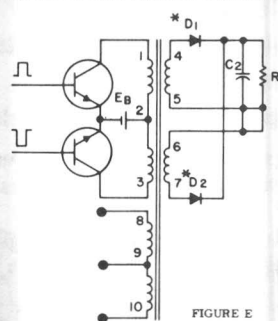


FIGURE E

\* D1 AND D2 USE SCHOTTKY OR FAST SWITCHING DIODES

## SCHEMATIC FOR SIZE 4 USING TRANSFORMER AS SELF-SATURATING

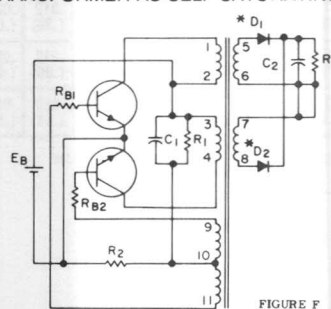


FIGURE F

## SCHEMATIC FOR SIZE 4 USING TRANSFORMERS AS LINEAR SWITCHING

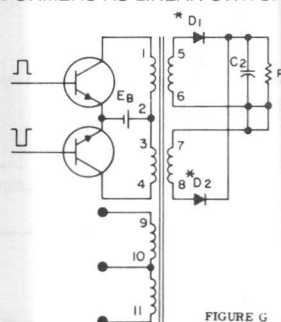


FIGURE G

\*D1 & D2 USE SCHOTTKY OR FAST SWITCHING DIODES

## SCHEMATIC FOR SIZES 5 & 6 USING TRANSFORMERS AS LINEAR SWITCHING

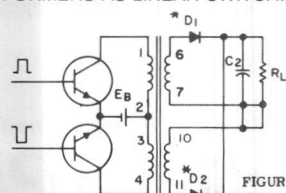


FIGURE H

\*D1 & D2 USE SCHOTTKY OR FAST SWITCHING DIODES

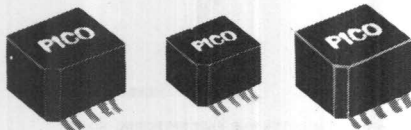
## SURFACE MOUNT

PICO surface mount units utilize materials and methods to withstand extreme temperature (220°C) of vapor phase, I.R., and other reflow procedures without degradation of electrical or mechanical characteristics.

# Ultra-Miniature DC-DC Converter Transformers

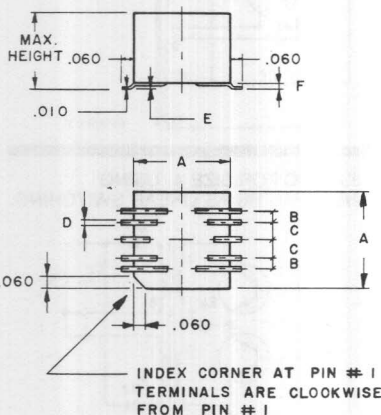
- These units can be used as self saturated or square wave driven
- Input voltages of: 5V, 12V, 24V and 48V
- Output voltages up to 300 Volts
- Power levels up to 40 Watts
- All units are magnetically shielded

All units can be supplied with higher or lower output voltages. Delivery - stock to one week, special voltages 9 days.



Size	Max. Height	A	B	C	D	E	F
1	.310 (7.87)	.400 (10.16)	.050 (1.27)	.075 (1.91)	.020 (.51)	.012 (.30)	.025 (.64)
2	.365 (9.27)	.495 (12.45)	.055 (1.40)	.095 (2.41)	.020 (.51)	.012 (.30)	.025 (.64)
3	.460 (11.68)	.615 (15.62)	.075 (1.91)	.125 (3.18)	.027 (.69)	.020 (.51)	.033 (.84)

All dimensions are in inches, ( ) = MM



## FEATURES

- 1) Units can be used as self-saturating or for linear switching applications. Operation over ambient temperature range from -55° to +105°C. All units manufactured to the requirements of MIL-T-27 (TF5S40ZZ)

Delivery—  
stock to one week

For immediate engineering assistance or to place an order—Call Toll Free 800-431-1064

# PICO Electronics, Inc.

453 N. MacQuesten Pkwy., Mt. Vernon, N.Y. 10552 • 914-699-5514 • FAX 914-699-5565

## INPUT 5 VOLTS

Part Number	D.C. OUT VOLTS			MAX. POWER OUT		APPROX. SWITCH FREQ.		SIZE	*** PRICE 1-9
	Bridge	Full Wave	Dual Bridge	-55°C-+105°C	-55°C-+70°C	Self-Saturated	Square-Wave Driven**		
31420	10	5	±5	1.5W	3W	15K	30K TO 60K	1	41.54
31440	12	6	±6	1.5W	3W	15K	30K TO 60K	1	41.54
31460	28	14	±14	1.5W	3W	15K	30K TO 60K	1	41.54
31480	48	24	±24	1.5W	3W	20K	40K TO 60K	1	41.54
31500	100	50	±50	1.5W	3W	20K	40K TO 60K	1	41.54
32505	10	5	±5	3W	4.5W	15K	30K TO 60K	2	41.54
32525	12	6	±6	3W	4.5W	15K	30K TO 60K	2	41.54
32545	28	14	±14	3W	4.5W	15K	30K TO 60K	2	41.54
32565	48	24	±24	3W	4.5W	20K	40K TO 60K	2	41.54
32585	100	50	±50	3W	4.5W	20K	40K TO 60K	2	41.54
32588	150	75	±75	3W	-	10K	30K TO 60K	2	47.86
32591	200	100	±100	3W	-	10K	30K TO 60K	2	47.86
32594	300	150	±150	3W	-	10K	30K TO 60K	2	47.86
33503	10	5	±5	5W	7.5W	10K	20K TO 50K	3	41.54
33523	12	6	±6	5W	7.5W	10K	20K TO 50K	3	41.54
33543	28	14	±14	5W	7.5W	10K	20K TO 50K	3	41.54
33563	48	24	±24	5W	7.5W	10K	20K TO 50K	3	41.54
33583	100	50	±50	5W	7.5W	10K	20K TO 50K	3	41.54
33586	150	75	±75	5W	-	10K	30K TO 60K	3	47.86
33589	200	100	±100	5W	-	10K	30K TO 60K	3	47.86
33592	300	150	±150	5W	-	10K	30K TO 60K	3	47.86

\*\* Lower switching frequency may be used at lower output power.

## INPUT 12 VOLTS

Part Number	D.C. OUT VOLTS			MAX. POWER OUT		APPROX. SWITCH FREQ.		SIZE	*** PRICE 1-9
	Bridge	Full Wave	Dual Bridge	-55°C-+105°C	-55°C-+70°C	Self-Saturated	Square-Wave Driven**		
31520	12	6	±6	1.5W	3W	15K	30K TO 60K	1	41.54
31440	24	12	±12	1.5W	3W	15K	30K TO 60K	1	41.54
31560	28	14	±14	1.5W	3W	15K	30K TO 60K	1	41.54
31580	48	24	±24	1.5W	3W	20K	40K TO 60K	1	41.54
31600	100	50	±50	1.5W	3W	20K	40K TO 60K	1	41.54
32605	12	6	±6	3W	4.5W	15K	30K TO 60K	2	41.54
32625	24	12	±12	3W	4.5W	15K	30K TO 60K	2	41.54
32645	28	14	±14	3W	4.5W	15K	30K TO 60K	2	41.54
32665	48	24	±24	3W	4.5W	20K	40K TO 60K	2	41.54
32685	100	50	±50	3W	4.5W	20K	40K TO 60K	2	41.54
32688	150	75	±75	3W	-	10K	30K TO 60K	2	47.86
32691	200	100	±100	3W	-	10K	30K TO 60K	2	47.86
32694	300	150	±150	3W	-	10K	30K TO 60K	2	47.86
33603	12	6	±6	5W	7.5W	15K	30K TO 60K	3	41.25
33623	28	14	±14	5W	7.5W	15K	30K TO 60K	3	41.25
33643	48	24	±24	5W	7.5W	20K	40K TO 60K	3	41.25
33663	100	50	±50	5W	7.5W	20K	40K TO 60K	3	41.25
33666	150	75	±75	5W	-	10K	30K TO 60K	3	47.86
33669	200	100	±100	5W	-	10K	30K TO 60K	3	47.86
33672	300	150	±150	5W	-	10K	30K TO 60K	3	47.86

\*\* Lower switching frequency may be used at lower output power.

\*\*\* Discount prices: 1-9 Net; 10-24 less 10%; 25-49 less 16%; 50-99 less 23%; 100-499 less 30%

Ordering Instructions: No minimum. Net 30 days F.O.B. Mt. Vernon, New York

- 2) All units can be supplied with higher or lower secondary voltages at the same power levels.
- 3) Secondary can be connected for full-wave bridge or dual bridge.
- 4) All units are magnetically shielded.

# INPUT 24 VOLTS

Part Number	D.C. OUT VOLTS			MAX. POWER OUT		APPROX. SWITCH FREQ.		Size	*** Price 1-9
	Bridge	Full Wave	Dual Bridge	-55°C-+105°C	-55°C-70°C	Self Saturated	Square-Wave Driven**		
31620	10	5	±5	1.5W	3W	15K	30K TO 60K	1	41.54
31640	28	14	±14	1.5W	3W	15K	30K TO 60K	1	41.54
31660	48	24	±24	1.5W	3W	20K	40K TO 60K	1	41.54
31680	100	50	±50	1.5W	3W	20K	40K TO 60K	1	41.54
32705	10	5	±5	3W	4.5W	15K	30K TO 60K	2	41.54
32725	28	14	±14	3W	4.5W	15K	30K TO 60K	2	41.54
32745	48	24	±24	3W	4.5W	20K	40K TO 60K	2	41.54
32765	100	50	±50	3W	4.5W	20K	40K TO 60K	2	41.54
32768	150	75	±75	3W	-	10K	30K TO 60K	2	47.86
32771	200	100	±100	3W	-	10K	30K TO 60K	2	47.86
32774	300	150	±150	3W	-	10K	30K TO 60K	2	47.86
33683	10	5	±5	5W	7.5W	15K	30K TO 60K	3	41.54
33703	28	14	±14	5W	7.5W	15K	30K TO 60K	3	41.54
33723	48	24	±24	5W	7.5W	20K	40K TO 60K	3	41.54
33743	100	50	±50	5W	7.5W	20K	40K TO 60K	3	41.54
33746	150	75	±75	5W	-	10K	30K TO 60K	3	47.86
33749	200	100	±100	5W	-	10K	30K TO 60K	3	47.86
33752	300	150	±150	5W	-	10K	30K TO 60K	3	47.86

\*\*Lower switching frequency may be used at lower output power.

# INPUT 48 VOLTS

Part Number	D.C. OUT VOLTS			MAX. POWER OUT		APPROX. SWITCH FREQ.		Size	*** Price 1-9
	Bridge	Full Wave	Dual Bridge	-55°C-+105°C	-55°C-70°C	Self Saturated	Square-Wave Driven**		
31700	24	12	±12	1.5W	3W	15K	30K TO 60K	1	41.54
31720	48	24	±24	1.5W	3W	20K	40K TO 60K	1	41.54
31740	100	50	±50	1.5W	3W	20K	40K TO 60K	1	41.54
31760	150	75	±75	1.5W	3W	20K	40K TO 60K	1	41.54
32785	24	12	±12	3W	4.5W	15K	30K TO 60K	2	41.54
32805	48	24	±24	3W	4.5W	20K	40K TO 60K	2	41.54
32825	100	50	±50	3W	4.5W	20K	40K TO 60K	2	41.54
32845	150	75	±75	3W	4.5W	20K	40K TO 60K	2	41.54
32848	200	100	±100	3W	4.5W	10K	30K TO 60K	2	47.86
32851	300	150	±150	3W	4.5W	10K	30K TO 60K	2	47.86
33763	24	12	±12	5W	7.5W	15K	30K TO 60K	3	47.86
33783	48	24	±24	5W	7.5W	20K	40K TO 60K	3	47.86
33803	100	50	±50	5W	7.5W	20K	40K TO 60K	3	47.86
33823	150	75	±75	5W	7.5W	20K	40K TO 60K	3	47.86
33826	200	100	±100	5W	-	10K	30K TO 60K	3	47.86
33829	300	150	±150	5W	-	10K	30K TO 60K	3	47.86

\*\*Lower switching frequency may be used at lower output power.

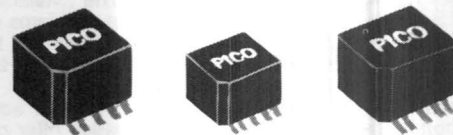
\*\*\* Discount prices: 1-9 Net; 10-24 less 10%; 25-49 less 16%; 50-99 less 23%; 100-499 less 30%

Ordering Instructions: No minimum. Net 30 days F.O.B. Mt. Vernon, New York

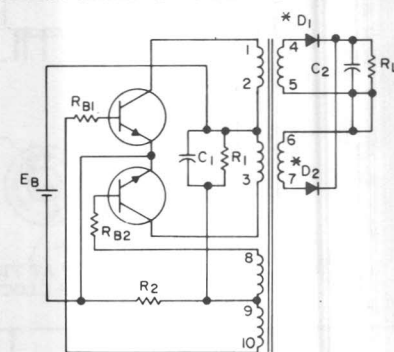
# PICO

## SURFACE MOUNT

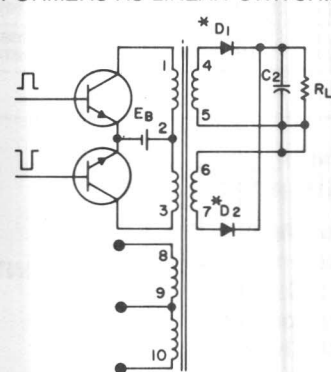
## Ultra-Miniature DC-DC Converter Transformers



SCHEMATIC USING TRANSFORMERS AS SELF-SATURATING



SCHEMATIC USING TRANSFORMERS AS LINEAR SWITCHING



\* D1 AND D2 USE SCHOTTKY OR FAST SWITCHING DIODES

Delivery—  
stock to one week

For immediate engineering assistance or to place an order—Call Toll Free 800-431-1064

# PICO Electronics, Inc.

453 N. MacQuesten Pkwy., Mt. Vernon, N.Y. 10552 • 914-699-5514 • FAX 914-699-5565



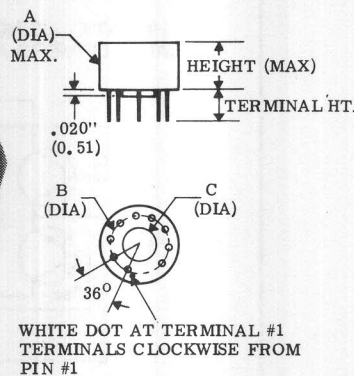
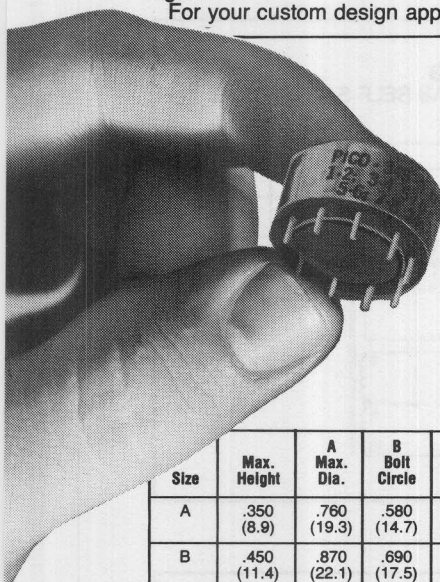
# MINIATURIZED SWITCH MODE INVERTER TRANSFORMERS

## 50KHz-150KHz / 10 Watts-60 Watts

Engineers are increasing the frequency of operation in DC-DC Converters for higher power applications. The availability of power MOSFETS which do not exhibit some of the problems encountered with the bi-polar transistors help to ease the Designer's task. For this reason Pico has developed a series of standard 50KHz to 150KHz transformers for use in push-pull circuits.

For low power applications please consider our self saturating transformers shown on pages 20 and 21 which offer many advantages.

For your custom design applications please contact the Factory.



Size	Max. Height	A Max. Dia.	B Bolt Circle	C Stand-Off	Terminal Dia.	Terminal Ht.	Wt. Nominal (Grams)
A	.350 (8.9)	.760 (19.3)	.580 (14.7)	.470 (11.9)	.028 (.71)	.150 (3.8)	8
B	.450 (11.4)	.870 (22.1)	.690 (17.5)	.590 (15.0)	.028 (.71)	.150 (3.8)	14
C	.510 (13.0)	1.110 (28.2)	.915 (23.2)	.750 (19.1)	.035 (.89)	.250 (6.4)	23
D	.650 (16.5)	1.260 (32.0)	1.040 (26.4)	.900 (22.9)	.035 (.89)	.250 (6.4)	37
E	.800 (20.3)	1.510 (38.4)	1.230 (31.2)	1.060 (26.9)	.035 (.89)	.250 (6.4)	54

All dimensions are in inches, ( ) = MM

### FEATURES:

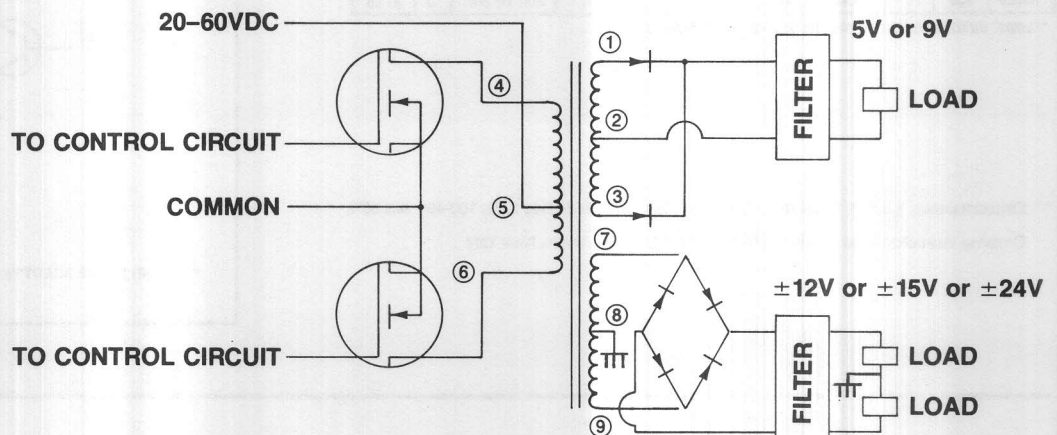
- Frequency Range 50KHz-150KHz
- Ultra-Miniature Size
- MIL-T-27
- Can be used for both MOSFET and Bi-Polar drives
- Magnetically Shielded
- LITZ Wire for Maximum Efficiency
- Special units can be supplied with higher or lower secondary voltages, addition of extra windings and taps, smaller size

### SPECIFICATIONS:

- Frequency Range 50KHz-150KHz
- 20 volt input corresponds to 45% duty cycle (i.e.  $4.5\mu\text{sec}$  on time per pulse for 100KHz operation). Units have been designed with an additional 1 volt output to account for losses in switchers, transformer, rectifier and filter.
- MIL-T-27  
All units manufactured to MIL-T-27 and are hermetically sealed in a metal case, Type TF5S03ZZ
- Magnetically Shielded
- Operating Temperature . . . . .  $-55^{\circ}\text{C}$  to  $+90^{\circ}\text{C}$
- Dielectric Strength . . . . . 500V RMS
- Insulation Resistance . . . . . Greater than 10,000 Megohms at 500V DC
- Thermal Shock . . . . . 25 Cycles, Method 107C, MIL-STD-202D. Test Conduction A-1

### PUSH PULL CONVERTER

20 Volt input corresponds to 45% duty cycle (i.e.  $4.5\mu\text{sec}$  on time per pulse for 100KHz operation). Units have been designed with an additional 1 Volt output to account for losses in switcher, transformer, rectifier and filter.



For immediate engineering assistance or to place an order—Call Toll Free 800-431-1064

Delivery—  
stock to one week

## PICO Electronics, Inc.

453 N. MacQuesten Pkwy., Mt. Vernon, N.Y. 10552 • 914-699-5514 • FAX 914-699-5565

PICO MODEL NUMBER	INPUT VOLTAGE (DC)	SECONDARY OUTPUT #1 (DC)	SECONDARY OUTPUT #2 (DC)	TYPICAL* PRIMARY INDUCTANCE (mH)	TYPICAL** PRIMARY LEAKAGE INDUCTANCE (μH)	SIZE	*** PRICE 1-9
67010	20-60	5	±12	2	3.5	A	37.70
67030	20-60	5	±15	2	3.5	A	37.70
67050	20-60	5	±24	2	3.5	A	37.70
67070	20-60	9	±12	2	3.5	A	37.70
67090	20-60	9	±15	2	3.5	A	37.70
67110	20-60	9	±24	2	3.5	A	37.70

**POWER =  
10 WATTS  
SIZE  
0.76" DIAM.  
× 0.35" HT.**

PICO MODEL NUMBER	INPUT VOLTAGE (DC)	SECONDARY OUTPUT #1 (DC)	SECONDARY OUTPUT #2 (DC)	TYPICAL* PRIMARY INDUCTANCE (mH)	TYPICAL** PRIMARY LEAKAGE INDUCTANCE (μH)	SIZE	*** PRICE 1-9
67130	20-60	5	±12	2.5	4	B	44.35
67150	20-60	5	±15	2.5	4	B	44.35
67170	20-60	5	±24	2.5	4	B	44.35
67190	20-60	9	±12	2.5	4	B	44.35
67210	20-60	9	±15	2.5	4	B	44.35
67230	20-60	9	±24	2.5	4	B	44.35

**POWER =  
20 WATTS  
SIZE  
0.87" DIAM.  
× 0.45" HT.**

PICO MODEL NUMBER	INPUT VOLTAGE (DC)	SECONDARY OUTPUT #1 (DC)	SECONDARY OUTPUT #2 (DC)	TYPICAL* PRIMARY INDUCTANCE (mH)	TYPICAL** PRIMARY LEAKAGE INDUCTANCE (μH)	SIZE	*** PRICE 1-9
67250	20-60	5	±12	1	1	C	52.18
67270	20-60	5	±15	1	1	C	52.18
67290	20-60	5	±24	1	1	C	52.18
67310	20-60	9	±12	1	1	C	52.18
67330	20-60	9	±15	1	1	C	52.18
67350	20-60	9	±24	1	1	C	52.18

**POWER =  
30 WATTS  
SIZE  
1.11" DIAM.  
× 0.51" HT.**

PICO MODEL NUMBER	INPUT VOLTAGE (DC)	SECONDARY OUTPUT #1 (DC)	SECONDARY OUTPUT #2 (DC)	TYPICAL* PRIMARY INDUCTANCE (mH)	TYPICAL** PRIMARY LEAKAGE INDUCTANCE (μH)	SIZE	*** PRICE 1-9
67370	20-60	5	±12	0.7	0.35	D	61.40
67390	20-60	5	±15	0.7	0.35	D	61.40
67410	20-60	5	±24	0.7	0.35	D	61.40
67430	20-60	9	±12	0.7	0.35	D	61.40
67450	20-60	9	±15	0.7	0.35	D	61.40
67470	20-60	9	±24	0.7	0.35	D	61.40

**POWER =  
45 WATTS  
SIZE  
1.26" DIAM.  
× 0.65" HT.**

PICO MODEL NUMBER	INPUT VOLTAGE (DC)	SECONDARY OUTPUT #1 (DC)	SECONDARY OUTPUT #2 (DC)	TYPICAL* PRIMARY INDUCTANCE (mH)	TYPICAL** PRIMARY LEAKAGE INDUCTANCE (μH)	SIZE	*** PRICE 1-9
67490	20-60	5	±12	0.6	0.4	E	72.23
67510	20-60	5	±15	0.6	0.4	E	72.23
67530	20-60	5	±24	0.6	0.4	E	72.23
67550	20-60	9	±12	0.6	0.4	E	72.23
67570	20-60	9	±15	0.6	0.4	E	72.23
67590	20-60	9	±24	0.6	0.4	E	72.23

**POWER =  
60 WATTS  
SIZE  
1.51" DIAM.  
× 0.80" HT.**

\*MEASURED AT TERMINALS 4-6 WITH 5 VOLTS RMS-100KHz

\*\*MEASURED AT TERMINALS 4-6 WITH 1-3 AND 7-9 SHORTED (0.1V RMS-300 KHz)

\*\*\*DISCOUNT PRICES: 1-9 Net; 10-24 less 10%; 25-49 less 16%; 50-99 less 23%; 100-499 less 30%

For immediate engineering assistance or to place an order—Call Toll Free 800-431-1064

**Delivery—  
stock to one week**

**PICO Electronics, Inc.**

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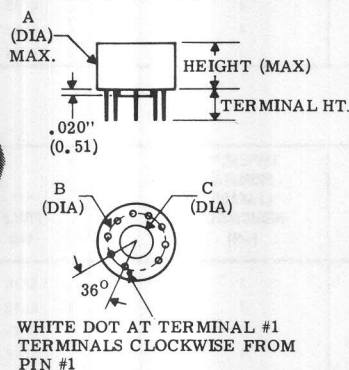
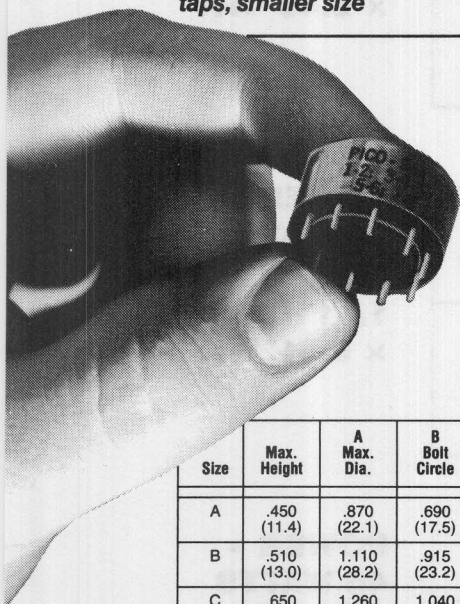


# MINIATURE FLYBACK CONVERTER TRANSFORMERS

## 10 Watts - 50 Watts / 50KHz - 100KHz

### FEATURES:

- Frequency Range 50KHz-100KHz
- Ultra-Miniature Size
- MIL-T-27
- Magnetically Shielded
- Special units can be supplied with higher or lower secondary voltages, addition of extra windings and taps, smaller size



Size	Max. Height	A Max. Dia.	B Bolt Circle	C Stand-off	Terminal Dia.	Terminal Ht.	Wt. Nominal (Grams)
A	.450 (11.4)	.870 (22.1)	.690 (17.5)	.590 (15.0)	.028 (.71)	.150 (3.8)	14
B	.510 (13.0)	1.110 (28.2)	.915 (23.2)	.750 (19.1)	.035 (.89)	.250 (6.4)	23
C	.650 (16.5)	1.260 (32.0)	1.040 (26.4)	.900 (22.9)	.035 (.89)	.250 (6.4)	37
D	.800 (20.3)	1.510 (38.4)	1.230 (31.2)	1.060 (26.9)	.035 (.89)	.250 (6.4)	54
E	.950 (24.13)	1.750 (44.45)	1.400 (35.56)	1.060 (26.92)	.035 (.89)	.250 (6.4)	80

All dimensions are in inches, ( ) = MM

These Transformers are used in flyback converters where from a wide range of input variation a regulated output is obtained. Circuit simplicity and multiple isolated outputs are some of the advantages of this topology.

All units can be supplied with higher or lower secondary voltages. Additional windings, taps or lower power are also available.

For low power applications please consider our self saturating transformers shown on pages 24 and 25 which offer many advantages.

For your custom design applications please contact the factory.

### SPECIFICATIONS:

- Frequency Range 50KHz-100KHz
- MIL-T-27  
All units manufactured to MIL-T-27 and are hermetically sealed in a metal case, Type TF5S03ZZ
- Magnetically Shielded
- Operating Temperature .... -55°C to +130°C
- Ambient Temperature ..... -55°C to +90°C (full power)
- Dielectric Strength ..... 500V RMS
- Insulation Resistance ..... Greater than 10,000 Megohms at 500V DC
- Thermal Shock ..... 25 Cycles, Method 107C, MIL-STD-202D. Test Conduction A-1

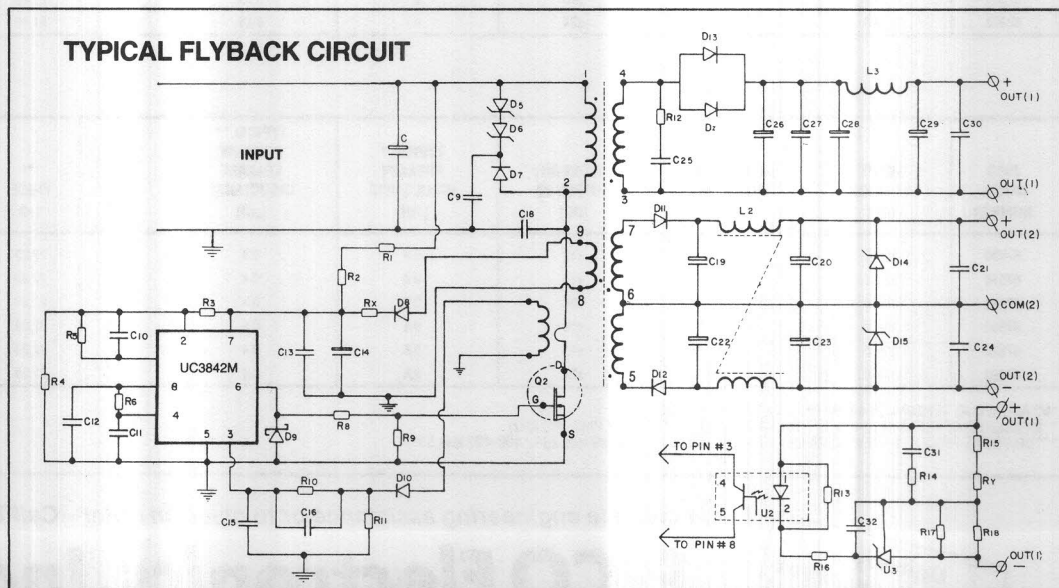
Delivery—  
stock to one week

**PICO  
Electronics,  
Inc.**

453 N. MacQuesten Pkwy.  
Mt. Vernon, N.Y. 10552

914-699-5514  
FAX 914-699-5565

### TYPICAL FLYBACK CIRCUIT





PICO MODEL NUMBER	INPUT VOLTAGE (VOLTS)	SECONDARY OUTPUT #1 (VOLTS)	SECONDARY OUTPUT #2 (VOLTS)	TYPICAL* PRIMARY INDUCTANCE (MICROHENRY)	TYPICAL** PRIMARY LEAKAGE INDUCTANCE (MICROHENRY)	SIZE	*** PRICE 1-9
67600	8-24	5	±12	12.5	175	A	37.50
67605	8-24	5	±15	12.5	175	A	37.50
67610	8-24	5	±24	12.5	175	A	37.50
67615	18-36	5	±12	50	700	A	37.50
67620	18-36	5	±15	50	700	A	37.50
67725	18-36	5	±24	50	700	A	37.50
67730	36-72	5	±12	200	2800	A	37.50
67735	36-72	5	±15	200	2800	A	37.50
67740	36-72	5	±24	200	2800	A	37.50

**POWER =  
10 WATTS  
SIZE  
.870" DIAM.  
× .450" HT.**

67745	8-24	5	±12	6.25	55	B	44.35
67750	8-24	5	±15	6.25	55	B	44.35
67755	8-24	5	±24	6.25	55	B	44.35
67760	18-36	5	±12	25	215	B	44.35
67765	18-36	5	±15	25	215	B	44.35
67770	18-36	5	±24	25	215	B	44.35
67775	36-72	5	±12	100	860	B	44.35
67780	36-72	5	±15	100	860	B	44.35
67785	36-72	5	±24	100	860	B	44.35

**POWER =  
20 WATTS  
SIZE  
1.110" DIAM.  
× .510" HT.**

67790	8-24	5	±12	3.75	30	C	52.18
67795	8-24	5	±15	3.75	30	C	52.18
67800	8-24	5	±24	3.75	30	C	52.18
67805	18-36	5	±12	15	120	C	52.18
67810	18-36	5	±15	15	120	C	52.18
67815	18-36	5	±24	15	120	C	52.18
67820	36-72	5	±12	60	480	C	52.18
67825	36-72	5	±15	60	480	C	52.18
67830	36-72	5	±24	60	480	C	52.18

**POWER =  
30 WATTS  
SIZE  
1.260" DIAM.  
× .650" HT.**

67835	8-24	5	±12	2.5	20	D	61.40
67840	8-24	5	±15	2.5	20	D	61.40
67845	8-24	5	±24	2.5	20	D	61.40
67850	18-36	5	±12	10	70	D	61.40
67855	18-36	5	±15	10	70	D	61.40
67860	18-36	5	±24	10	70	D	61.40
67865	36-72	5	±12	40	280	D	61.40
67870	36-72	5	±15	40	280	D	61.40
67875	36-72	5	±24	40	280	D	61.40

**POWER =  
40 WATTS  
SIZE  
1.510" DIAM.  
× .800" HT.**

67880	8-24	5	±12	02	15	E	72.23
67885	8-24	5	±15	02	15	E	72.23
67890	8-24	5	±24	02	15	E	72.23
67895	18-36	5	±12	08	60	E	72.23
67900	18-36	5	±15	08	60	E	72.23
67905	18-36	5	±24	08	60	E	72.23
67910	36-72	5	±12	32	240	E	72.23
67915	36-72	5	±15	32	240	E	72.23
67920	36-72	5	±24	32	240	E	72.23

**POWER =  
50 WATTS  
SIZE  
1.750" DIAM.  
× .950" HT.**

\*MEASURED AT TERMINALS 4-6 WITH 5 VOLTS RMS-100KHz

\*\*MEASURED AT TERMINALS 4-6 WITH 1-3 AND 7-9 SHORTED (0.1V RMS-300 KHz)

\*\*\*DISCOUNT PRICES: 1-9 Net; 10-24 less 10%; 25-49 less 16%; 50-99 less 23%; 100-499 less 30%

**Delivery—  
stock to one week**

For immediate engineering assistance or to place an order—Call Toll Free 800-431-1064

**PICO Electronics, Inc.**

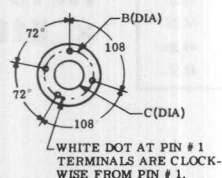
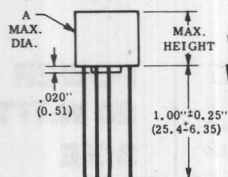
453 N. MacQuesten Pkwy., Mt. Vernon, N.Y. 10552 • 914-699-5514 • FAX 914-699-5565

# PICO's Miniaturized Power Inductors

## PLUG-IN

Size	Max. Height	A Max. Dia.	B Bolt Circle	C Stand-Off	Terminal Dia.
0	.250 (6.35)	.320 (8.13)	.21 (5.33)	.13 (3.30)	.012 (.31)
1	.280 (7.11)	.410 (10.41)	.260 (6.6)	.160 (4.06)	.012 (.31)
2	.340 (8.63)	.500 (12.7)	.350 (8.89)	.250 (6.35)	.012 (.31)
3	.415 (10.54)	.630 (16.0)	.440 (11.17)	.340 (8.64)	.016 (.41)

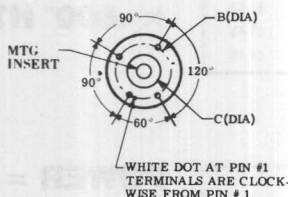
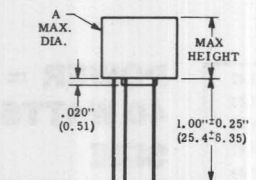
ALL DIMENSIONS ARE IN INCHES, ( ) = MM



## PLUG-IN

Size	Max. Height	A Max. Dia.	B Bolt Circle	C Stand-Off	Mtg. Insert	Terminal Dia.
4	.500 (12.7)	.800 (20.32)	.560 (14.22)	.460 (11.68)	—	.016 (.41)
5	.650 (16.51)	.950 (24.13)	.670 (17.0)	.570 (14.48)	6-32 UNC 8 Threads Deep	.020 (.51)

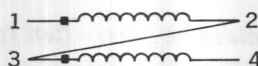
ALL DIMENSIONS ARE IN INCHES, ( ) = MM



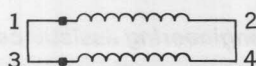
## SPECIFICATIONS:

- All units manufactured to MIL-T-27 and are type TF5S04ZZ
- Inductance measured at 0.1 VRMS-10 kHz
- Temperature rise at rated D.C. current is less than 30°C
- Maximum ambient is 100°C
- Unit has magnetic shield

## PLUG-IN TERMINAL ARRANGEMENT SERIES CONNECTION



## PLUG-IN TERMINAL ARRANGEMENT PARALLEL CONNECTION



**PLUG-IN and  
SURFACE MOUNT UNITS**  
DELIVERY — STOCK TO ONE WEEK

Plug-in units can be manufactured and tested to MIL-T-27/356. Contact Factory for price and delivery information and appropriate part numbers (MIL-T-27/356-01 thru MIL-T-27/356-63).

All inductors have split windings—ratings shown in table are for series connection. Parallel connection will have 1/4 inductance at twice the DC current and 1/4 the DC resistance, i.e. parallel connection of PICO-41020 will have 5 millihenry at .12 Amps DC with DC resistance of 13.5 Ohms

## PLUG-IN

Inductance	I <sub>DC</sub> (Amps)	R <sub>DC</sub> (Ohms)	SRF (MHz)	Size	Model Number	Price 1-9
20 Milli-Henry	.06	54	0.275	1	41020	18.97
	.10	29	0.207	2	42105	18.97
	.14	20	0.230	3	43103	18.97
	.22	12.4	0.210	4	44500	22.70
	.29	10.2	0.180	5	45107	22.70
15 Milli-Henry	.07	40.5	0.320	1	41040	18.97
	.12	22	0.240	2	42125	18.97
	.16	15	0.235	3	43123	18.97
	.23	9.3	0.280	4	44520	22.70
	.33	7.7	0.245	5	45127	22.70
10 Milli-Henry	.05	60	0.400	0	40050	18.97
	.08	27	0.380	1	41060	18.97
	.14	14.6	0.390	2	42145	18.97
	.20	10	0.340	3	43143	18.97
	.31	6.2	0.290	4	44560	22.70
7.5 Milli-Henry	.058	45	0.500	0	40070	18.97
	.10	20.3	0.450	1	41080	18.97
	.17	11	0.430	2	42165	18.97
	.24	7.5	0.390	3	43163	18.97
	.38	4.7	0.350	4	44580	22.70
5 Milli-Henry	.49	3.8	0.340	5	45167	22.70
	.071	30	0.650	0	40090	18.97
	.12	13.5	0.600	1	41100	18.97
	.21	7.3	0.490	2	42185	18.97
	.30	5	0.550	3	43183	18.97
3 Milli-Henry	.47	3.1	0.460	4	44600	22.70
	.6	2.6	0.410	5	45187	22.70
	.091	18	0.800	0	40110	18.97
	.16	8.1	0.710	1	41120	18.97
	.27	4.4	0.650	2	42205	18.97
	.38	3	0.570	3	43203	18.97
	.6	1.9	0.600	4	44620	22.70
	.78	1.5	0.550	5	45207	22.70

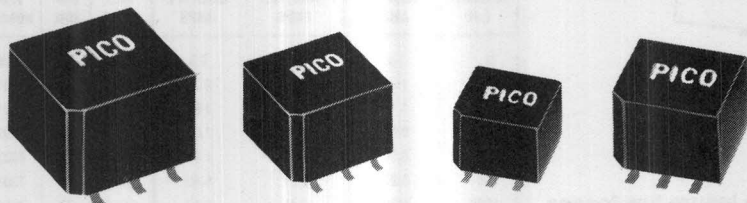
\*\*\* Discount Prices: 1-9 Net; 10-24 less 10%; 25-49 less 16%; 50-99 less 23%; 100-499 less 30%

## PLUG-IN

Inductance	I <sub>DC</sub> (Amps)	R <sub>DC</sub> (Ohms)	SRF (MHz)	Size	Model Number	Price 1-9
2 Milli-Henry	.112	14	1.000	0	40130	18.97
	.19	5.4	0.950	1	41140	18.97
	.33	2.9	0.850	2	42225	18.97
	.47	2	0.800	3	43223	18.97
	.74	1.3	0.700	4	44640	22.70
1 Milli-Henry	.95	1	0.650	5	45227	22.70
	.158	6	1.650	0	40150	18.97
	.27	2.7	1.500	1	41160	18.97
	.47	1.5	1.200	2	42245	18.97
	.66	1	1.100	3	43243	18.97
750 Micro-Henry	1	.62	1.050	4	44660	22.70
	1.3	.5	1.000	5	45247	22.70
	.182	5	1.700	0	40170	18.97
	.31	2	1.550	1	41180	18.97
	.54	1	1.400	2	42265	18.97
500 Micro-Henry	.76	.75	1.400	3	43263	18.97
	1.2	.47	1.200	4	44680	22.70
	1.6	.38	1.150	5	45267	22.70
	.224	4	2.300	0	40190	18.97
	.38	1.3	2.100	1	41200	18.97
250 Micro-Henry	.66	.66	1.900	2	42285	18.97
	.93	.5	1.600	3	43283	18.97
	1.47	.31	1.500	4	44700	22.70
	1.9	.25	1.450	5	45287	22.70
	.316	1.5	3.300	0	40210	18.97
100 Micro-Henry	.53	.66	3.000	1	41220	18.97
	.93	.33	2.500	2	42305	18.97
	1.3	.25	2.400	3	43303	18.97
	2.08	.16	2.100	4	44720	22.70
	2.7	.13	2.010	5	45307	22.70
40 Micro-Henry	.50	.6	4.500	0	40230	18.97
	.78	.300	4.000	1	41240	18.97
	1.35	.170	3.900	2	42325	18.97
	1.95	.110	3.500	3	43323	18.97
	3.08	.070	3.300	4	44740	22.70
	3.88	.060	3.200	5	45327	22.70
	.79	.32	5.500	0	40250	18.97
	1.18	.141	5.000	1	41260	18.97
	2.03	.070	4.500	2	42345	18.97
	2.68	.060	4.500	3	43343	18.97

Ordering Instructions: No minimum. Net 30 days F.O.B. Mt. Vernon, New York.

# PICO Plug-In and Surface Mount Inductors are ideal for Noise, Spike and Power Filtering Applications in Power Supplies, DC-DC Converters and Switching Regulators



- Minimum possible size
- Manufactured to MIL-T-27 (TF5S04ZZ)
- Special high frequency core material to insure low losses
- All units have split windings
- Large selection of sizes available

All inductors have split windings—ratings shown in table are for series connection. Parallel connection will have 1/4 inductance at twice the DC current and 1/4 the DC resistance, ie. parallel connection of PICO-41320 will have 5 millihenry at .12 Amps DC with DC resistance of 13.5 Ohms

## SURFACE MOUNT

Inductance	I <sub>DC</sub> (Amps)	R <sub>DC</sub> (Ohms)	SRF MHz	Size	Model Number	Price 1-9
20 Milli-Henry	.06	54	0.275	1	41320	20.87
	.10	29	0.207	2	42405	20.87
	.14	20	0.230	3	43403	20.87
15 Milli-Henry	.07	40.5	0.320	1	41340	20.87
	.12	22	0.240	2	42425	20.87
	.16	15	0.235	3	43423	20.87
10 Milli-Henry	.05	60	0.400	0	40350	20.87
	.08	27	0.380	1	41360	20.87
	.14	14.6	0.390	2	42445	20.87
	.20	10	0.340	3	43443	20.87
7.5 Milli-Henry	.058	45	0.500	0	40370	20.87
	.10	20.3	0.450	1	41380	20.87
	.17	11	0.430	2	42465	20.87
	.24	7.5	0.390	3	43463	20.87
5 Milli-Henry	.071	30	0.650	0	40390	20.87
	.12	13.5	0.600	1	41400	20.87
	.21	7.3	0.490	2	42485	20.87
	.30	5	0.550	3	43483	20.87
3 Milli-Henry	.091	18	0.800	0	40410	20.87
	.16	8.1	0.710	1	41420	20.87
	.27	4.4	0.650	2	42505	20.87
	.38	3	0.570	3	43503	20.87

### SPECIFICATIONS:

- All units manufactured to MIL-T-27 and are type TF5S04ZZ
- Inductance measured at 0.1 VRMS-10 kHz
- Temperature rise at rated D.C. current is less than 30°C
- Maximum ambient is 100°C
- Unit has magnetic shield

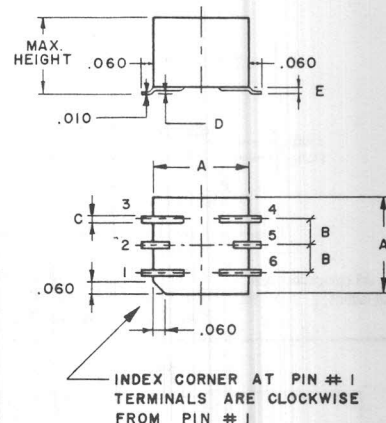
## SURFACE MOUNT

Inductance	I <sub>DC</sub> (Amps)	R <sub>DC</sub> (Ohms)	SRF MHz	Size	Model Number	Price 1-9
2 Milli-Henry	.112	15	1.000	0	40430	20.87
	.19	5.4	0.950	1	41440	20.87
	.33	2.9	0.850	2	42525	20.87
	.47	2	0.800	3	43523	20.87
1 Milli-Henry	.158	6	1.650	0	40450	20.87
	.27	2.7	1.500	1	41460	20.87
	.47	1.5	1.200	2	42545	20.87
	.66	1	1.100	3	43543	20.87
750 Micro-Henry	.182	5	1.700	0	40470	20.87
	.31	2	1.550	1	41480	20.87
	.54	1	1.400	2	42565	20.87
500 Micro-Henry	.224	4	2.300	0	40490	20.87
	.38	1.3	2.100	1	41500	20.87
	.66	.66	1.900	2	42585	20.87
	.93	.5	1.600	3	43583	20.87
250 Micro-Henry	.316	1.5	3.300	0	40510	20.87
	.53	.66	3.000	1	41520	20.87
	.93	.33	2.500	2	42605	20.87
	1.3	.25	2.400	3	43603	20.87
100 Micro-Henry	.50	.6	4.500	0	40530	20.87
	.78	.300	4.000	1	41540	20.87
	1.35	.170	3.900	2	42625	20.87
	1.95	.110	3.500	3	43623	20.87
40 Micro-Henry	.79	.32	5.500	0	40550	20.87
	1.18	.141	5.000	1	41560	20.87
	2.03	.070	4.500	2	42645	20.87
	2.68	.060	4.500	3	43643	20.87

## SURFACE MOUNT

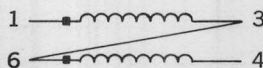
Size	Max. Height	A	B	C	D	E
0	.280 (6.96)	.325 (8.26)	.085 (2.16)	.020 (.51)	.012 (.30)	.025 (.64)
1	.310 (7.87)	.400 (10.16)	.115 (2.92)	.027 (.69)	.015 (.38)	.027 (.69)
2	.365 (9.27)	.495 (12.45)	.140 (3.56)	.027 (.69)	.015 (.38)	.027 (.69)
3	.460 (11.68)	.615 (15.62)	.185 (4.70)	.027 (.69)	.020 (.51)	.033 (.84)

All dimensions are in inches, ( ) = MM



NOTE: PINS 2 AND 5 ARE DUMMY PINS

### SURFACE MOUNT TERMINAL ARRANGEMENT SERIES CONNECTION



### SURFACE MOUNT TERMINAL ARRANGEMENT PARALLEL CONNECTION



Delivery—  
stock to one week

For immediate engineering assistance or to place an order—Call Toll Free 800-431-1064

## PICO Electronics, Inc.

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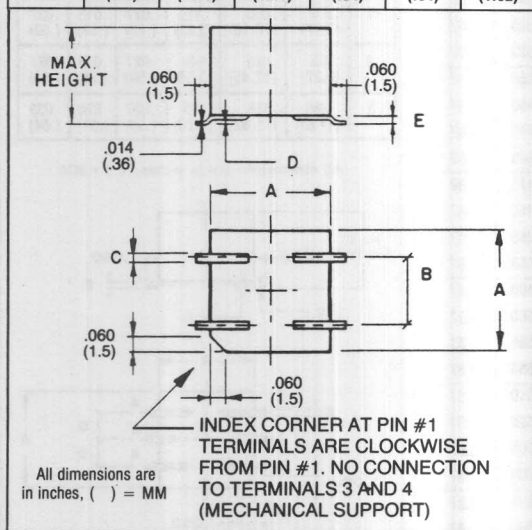
# LOW PROFILE SURFACE MOUNT **PICO** POWER INDUCTORS



These inductors utilize special techniques to minimize cross coupling and give the utmost in shielding efficiency. They are ideal for Noise, Spike and Power Filtering Applications in Power Supplies, DC-DC Converters and Switching Regulators

- Handle large transient DC currents
- Minimum possible size
- Manufactured to MIL-T-27 (TF5S04ZZ)
- Special high frequency core material to insure low losses
- Large selection of sizes available

Size	Max. Height	A	B	C	D	E
1	.250 (6.4)	.450 (11.4)	.300 (7.6)	.027 (.69)	.020 (.51)	.033 (.84)
2	.300 (7.6)	.550 (14.0)	.400 (10.2)	.037 (.94)	.025 (.64)	.040 (1.02)
3	.325 (8.3)	.650 (16.5)	.500 (12.7)	.037 (.94)	.025 (.64)	.040 (1.02)



## SIZE 1

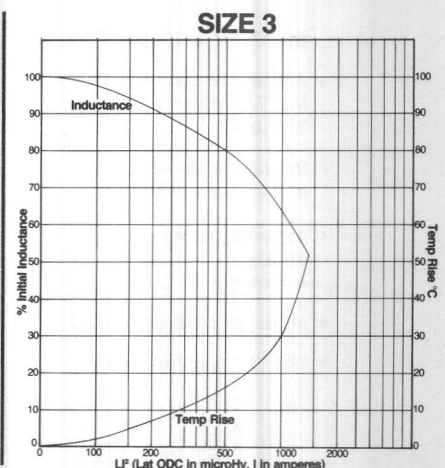
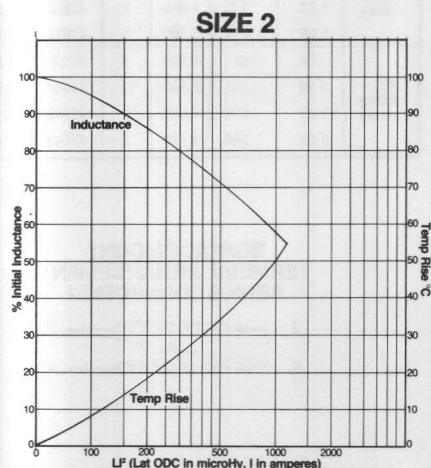
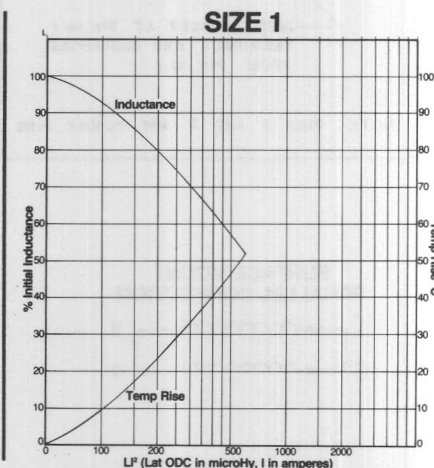
LODC MICROHY (μH)	IDC for 10% DROP in L AMPS	IDC for 20% DROP in L AMPS	IDC for 30% DROP in L AMPS	RDC OHMS	SRF MHz	PICO PART NUMBER	PRICE (1-9)
25	1.9	2.6	3.3	.032	4.5	73005	22.50
50	1.34	1.84	2.33	0.064	3.3	73010	22.50
75	1.10	1.50	1.91	0.096	2.7	73015	22.50
100	0.95	1.30	1.65	0.128	2.25	73020	22.50
250	0.60	0.82	1.04	0.320	1.5	73025	22.50
750	0.35	0.47	0.60	0.960	.85	73030	22.50
1000	0.30	0.41	0.52	1.280	.73	73035	22.50
1500	0.25	0.34	0.43	1.920	.6	73040	22.50
2500	0.19	0.26	0.33	3.20	.45	73045	22.50
5000	0.13	0.18	0.23	6.40	.33	73050	22.50

## SIZE 2

LODC MICROHY (μH)	IDC for 10% DROP in L AMPS	IDC for 20% DROP in L AMPS	IDC for 30% DROP in L AMPS	RDC OHMS	SRF MHz	PICO PART NUMBER	PRICE (1-9)
25	2.5	3.7	4.7	.020	4.5	73115	22.50
50	1.77	2.61	3.30	0.040	3.3	73120	22.50
75	1.44	2.14	2.71	0.060	2.7	73125	22.50
100	1.25	1.85	2.35	0.080	2.25	73130	22.50
250	0.79	1.17	1.49	0.20	1.5	73135	22.50
750	0.46	0.68	0.86	0.60	.85	73140	22.50
1000	0.40	0.59	0.74	0.80	.73	73145	22.50
1500	0.32	0.48	0.61	1.20	.6	73150	22.50
2500	0.25	0.37	0.47	2.00	.45	73155	22.50
5000	0.18	0.26	0.33	4.00	.33	73160	22.50

## SIZE 3

LODC MICROHY (μH)	IDC for 10% DROP in L AMPS	IDC for 20% DROP in L AMPS	IDC for 30% DROP in L AMPS	RDC OHMS	SRF MHz	PICO PART NUMBER	PRICE (1-9)
25	3.0	4.4	5.6	.015	4.0	73205	22.50
50	2.12	3.11	4.00	0.03	3.0	73210	22.50
75	1.73	2.54	3.23	0.05	2.4	73215	22.50
100	1.50	2.20	2.80	0.06	2.0	73220	22.50
250	0.95	1.39	1.77	0.15	1.3	73225	22.50
750	0.55	0.80	1.02	0.45	.75	73230	22.50
1000	0.47	0.70	0.89	0.60	.65	73235	22.50
1500	0.39	0.57	0.72	0.90	.55	73240	22.50
2500	0.30	0.44	0.56	1.50	.40	73245	22.50
5000	0.21	0.31	0.40	3.00	.30	73250	22.50



Delivery—  
stock to one week

For immediate engineering assistance or to place an order—Call Toll Free 800-431-1064

**PICO Electronics, Inc.**

453 N. MacQuesten Pkwy., Mt. Vernon, N.Y. 10552 • 914-699-5514 • FAX 914-699-5565

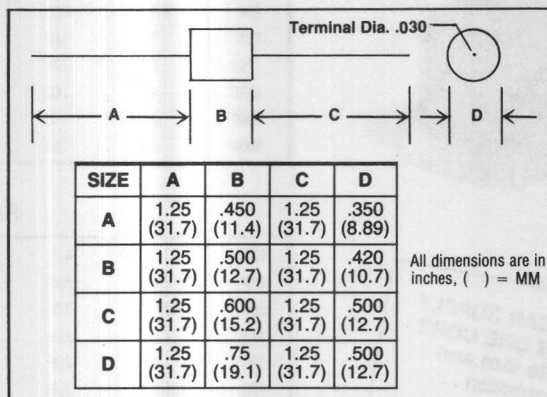
# Miniaturized Power Inductors with Axial Leads, Shielded Construction

These inductors utilize special techniques to minimize cross coupling and give the utmost in shielding efficiency. They are ideal for Noise, Spike and Power Filtering Applications in Power Supplies, DC-DC Converters and Switching Regulators

- Minimum possible size
- Shielded construction
- Mountable through PC board or to posts
- Manufactured to MIL-T-27 (TF5S04ZZ)
- Suitable for reel-mounted assembly
- Low losses

## SPECIFICATIONS

- All units meet MIL-T-27 (TF5S04ZZ)
- Inductance measured at 0.1VRMS-100KHz
- Maximum ambient plus temp. rise limited to 130°C (i.e. temp. rise for 72205 at .425 AMPS will be 12°C, ambient should be limited to 118°C -at .64AMPS temp. rise is 30°C, ambient should be limited to 100°C)



## SIZE A

LODC MICROHY (μH)	IDC FOR 10% DROP in L AMPS	IDC FOR 20% DROP in L AMPS	IDC FOR 30% DROP in L AMPS	RDC OHMS	SRF MHz	Q @ 100KHz	PICO PART NUMBER	PRICE (1-9)
500	.425	.640	.848	.74	1.4	45	72205	17.12
375	.490	.740	.98	.55	1.6	45	72215	17.12
250	.600	.906	1.2	.36	2.0	45	72225	17.12
150	.775	1.17	1.55	.22	2.5	45	72235	17.12
100	.950	1.43	1.90	.15	3.0	45	72245	17.12
75	1.01	1.65	2.2	.11	3.6	45	72255	17.12
50	1.34	2.02	2.7	.075	4.4	45	72265	17.12

## SIZE B

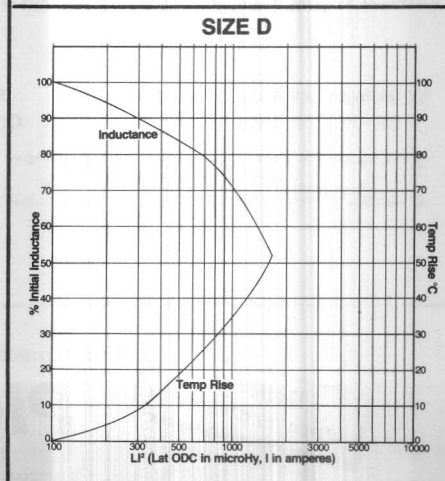
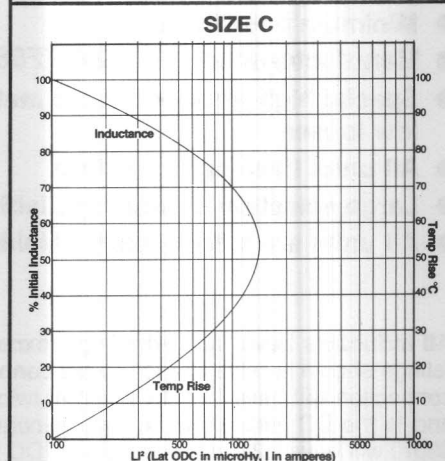
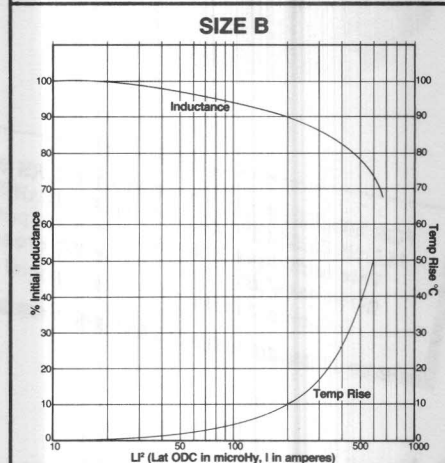
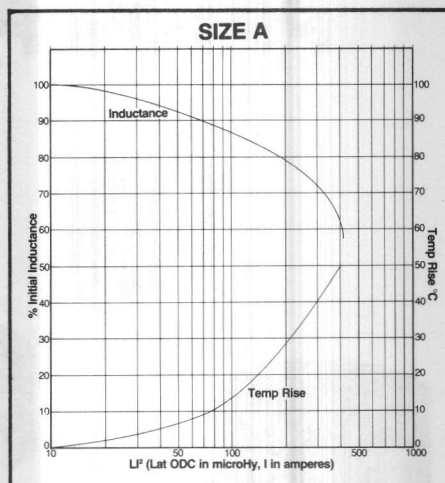
1000	0.450	0.600	0.750	0.85	0.9	45	72310	17.12
750	0.52	0.693	0.866	0.64	1.04	45	72320	17.12
500	0.63	0.848	1.06	0.43	1.3	45	72330	17.12
375	0.73	0.980	1.22	0.32	1.5	45	72340	17.12
250	0.90	1.20	1.5	0.22	1.8	45	72350	17.12
150	1.16	1.550	1.93	0.13	2.3	45	72360	17.12
100	1.42	1.9	2.37	0.085	2.8	45	72370	17.12
75	1.64	2.2	2.73	0.064	3.3	45	72380	17.12
50	2.0	2.7	3.35	0.043	4.0	45	72390	17.12

## SIZE C

1000	0.500	0.750	1.0	.700	.85	45	72405	17.12
750	0.580	0.866	1.15	.520	1.0	45	72415	17.12
500	0.707	1.06	1.41	.350	1.2	45	72425	17.12
375	0.816	1.22	1.63	.260	1.4	45	72435	17.12
250	1.0	1.50	2.0	.175	1.7	45	72445	17.12
150	1.29	1.93	2.58	.105	2.2	45	72455	17.12
100	1.58	2.37	3.16	.070	2.7	45	72465	17.12
75	1.82	2.73	3.65	.053	3.1	45	72475	17.12
50	2.25	3.35	4.5	.035	4.0	45	72485	17.12

## SIZE D

200	1.4	2.14	2.76	.107	1.7	35	72500	15.99
175	1.5	2.29	2.95	.093	2.0	35	72510	15.99
150	1.6	2.47	3.18	.08	2.2	35	72520	15.99
125	1.78	2.7	3.49	.066	2.5	35	72530	15.99
100	1.99	3.03	3.9	.053	2.7	35	72540	15.99
75	2.3	3.5	4.5	.040	3.1	35	72550	15.99
50	2.8	4.3	5.5	0.27	4.0	35.7	2560	15.99
25	3.98	6.06	7.79	.014	4.5	35	72570	15.99
15	5.14	7.82	10	.007	5.1	35	72580	15.99



**PICO**  
Electronics,  
Inc.

453 N. MacQuesten Pkwy.  
Mt. Vernon, N.Y. 10552

914-699-5514  
FAX 914-699-5565

Delivery—  
stock to one week

For immediate  
engineering  
assistance  
or to place  
an order—

Call Toll Free  
800-431-1064

# PICO's POWER INDUCTORS

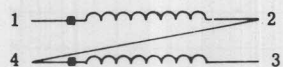


FOR MULTIPLE OUTPUT REGULATORS WE CAN SUPPLY  
ALL NECESSARY INDUCTANCE VALUES ON ONE CORE  
This technique provides minimum possible size and  
gives excellent dynamic and DC cross-regulation . . .  
Contact factory for these special inductors.

- Handle large transient DC currents
- Minimum possible size
- Manufactured to MIL-T-27 (TF5S04ZZ)
- Special high frequency core material to insure low losses
- All units have split windings
- Large selection of sizes available
- All units are magnetically shielded

All inductors have split windings (except size AA)—ratings shown in table are for series connection. Parallel connection will have 1/4 inductance at twice the DC current and 1/4 the DC resistance, ie. parallel connection of PICO-69010 will have 32.5 microhenry with DC resistance of .015 Ohms at 6 Amps DC current (10% drop in L)

TERMINAL ARRANGEMENT  
SERIES CONNECTION



PARALLEL  
CONNECTION



## SIZE AA

LODC MICROHY (μH)	IDC for 10% DROP in L AMPS	IDC for 20% DROP in L AMPS	IDC for 30% DROP in L AMPS	RDC OHMS	SRF MHz	PICO PART NUMBER	PRICE (1-9)
25	3.53	4.80	5.94	.012	4.0	69410	26.27
50	2.5	3.4	4.2	.024	3.0	69420	26.27
75	2.04	2.78	3.43	.036	2.4	69430	26.27
100	1.77	2.4	2.99	.048	2.0	69440	26.27
250	1.12	1.52	1.88	.12	1.3	69450	26.27
750	.65	.88	1.08	.36	.75	69460	26.27
1000	.56	.76	.94	.48	.65	69470	26.27
1500	.46	.62	.77	.72	.55	69480	26.27
2500	.35	.48	.59	1.2	.4	69490	26.27
5000	.25	.34	.42	2.4	.3	69500	26.27

## SIZE A

130	3.0	4.5	5.5	.060	1.7	69010	26.27
210	2.5	3.5	4.5	.11	1.4	69020	26.27
260	2.2	3.2	3.9	.14	1.25	69030	26.27
315	2.0	2.9	3.5	.17	1.14	69040	26.27
525	1.6	2.2	2.7	.28	0.9	69050	26.27
790	1.2	1.8	2.2	.42	0.7	69060	26.27
1050	1	1.6	1.9	.56	0.6	69070	26.27
1300	.95	1.4	1.7	.7	0.4	69080	26.27

## SIZE B

228	3.5	5.2	6.8	.070	1.1	69105	28.91
323	2.7	4.0	5.0	.105	0.9	69115	28.91
460	2.5	3.7	4.8	.15	0.8	69125	28.91
787	1.9	2.8	3.7	.26	0.6	69135	28.91
1050	1.6	2.4	3.2	.34	0.5	69145	28.91
1310	1.5	2.2	2.8	.43	0.45	69155	28.91
1600	1.3	2.0	2.6	.52	0.4	69165	28.91
1840	1.2	1.8	2.4	.60	0.38	69175	28.91
2100	1.1	1.7	2.2	.70	0.33	69185	28.91

## SIZE C

165	5.0	7.0	9.5	.040	1.4	69205	31.76
191	4.7	7.0	8.8	.050	1.3	69215	31.76
262	4.0	5.6	7.5	.07	1.1	69225	31.76
390	3.3	4.6	6.2	.10	0.9	69235	31.76
525	2.8	4.0	5.3	.14	0.8	69245	31.76
790	2.3	3.2	4.3	.20	0.6	69255	31.76
1050	2.0	2.8	3.8	.27	0.55	69265	31.76
1310	1.8	2.5	3.4	.34	0.5	69275	31.76
1580	1.6	2.3	3.0	.41	0.45	69285	31.76
1838	1.5	2.1	2.8	.48	0.4	69295	31.76

## SIZE D

150	6.35	9.23	11.5	.027	1.4	69310	34.95
250	4.9	7.15	9	.045	1.2	69320	34.95
500	3.5	5	6.32	.09	.8	69330	34.95
750	2.8	4.13	5.16	.135	.65	69340	34.95
1000	2.5	3.6	4.5	.18	.55	69350	34.95
2500	1.55	2.26	2.8	.45	.35	69360	34.95
5000	1.1	1.6	2	.9	.25	69370	34.95

Delivery—  
stock to one week

For immediate engineering assistance or to place an order—Call Toll Free 800-431-1064

## PICO Electronics, Inc.

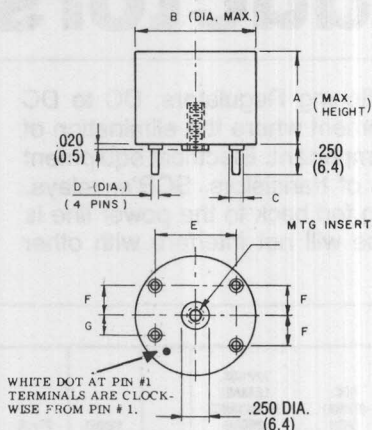
453 N. MacQuesten Pkwy., Mt. Vernon, N.Y. 10552 • 914-699-5514 • FAX 914-699-5565



# These PICO Power Inductors Can Handle Large Transient DC Currents

*They are ideal for Noise, Spike and Power Filtering Applications in Power Supplies, DC-DC Converters and Switching Regulators*

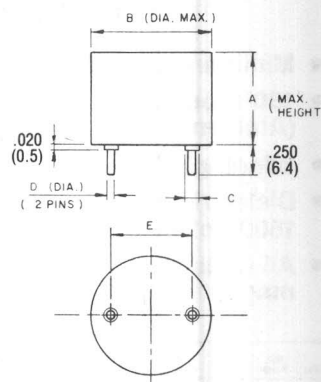
**SIZE A, B, C, D**



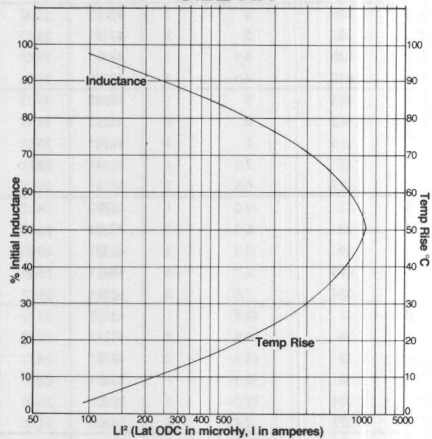
Size	A Max. Height	B Max. Dia.	C	D Terminal Dia.	E	F	G	Mfg. Insert	Wt. Nominal Grams
AA	.45" (11.4)	.75 (19.1)	.1 (2.54)	.07 (1.78)	.5" (12.7)	-	-	-	7
A	.56 (14.2)	.96 (24)	.1 (2.54)	.07 (1.78)	.6 (15.2)	.2 (5.1)	.1 (2.5)	4-40 UNC 5 Threads Deep	23
B	.635 (16.1)	1.215 (30.9)	.1 (2.54)	.07 (1.78)	.8 (20.3)	.25 (6.4)	.15 (3.8)	4-40 UNC 5 Threads Deep	44
C	.72 (18.3)	1.33 (33.8)	.125 (3.2)	.094 (2.4)	.9 (22.9)	.25 (6.4)	.15 (3.8)	6-32 UNC 8 Threads Deep	60
D	.76 (19.3)	1.5 (38.1)	.125 (3.2)	.094 (2.4)	1.1 (27.9)	.3 (7.6)	.2 (5.1)	6-32 UNC 8 Threads Deep	80

DIMENSIONS ARE IN INCHES (MM)

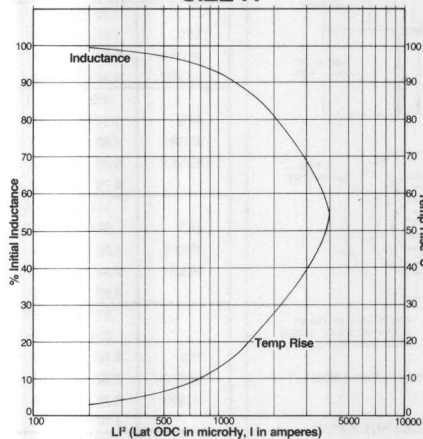
**SIZE AA**



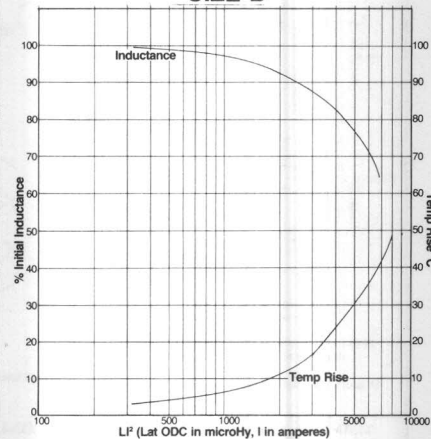
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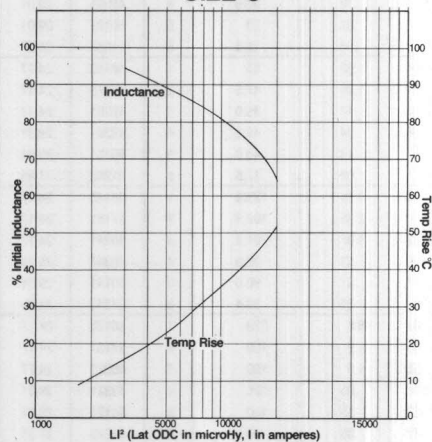
**SIZE A**



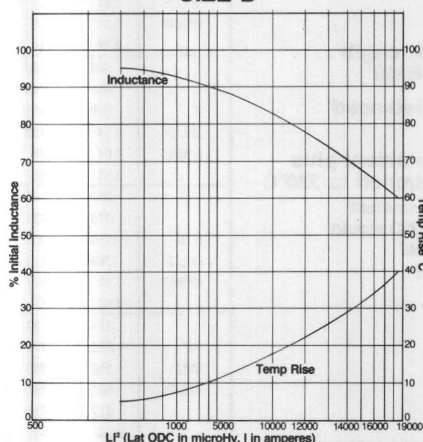
**SIZE B**



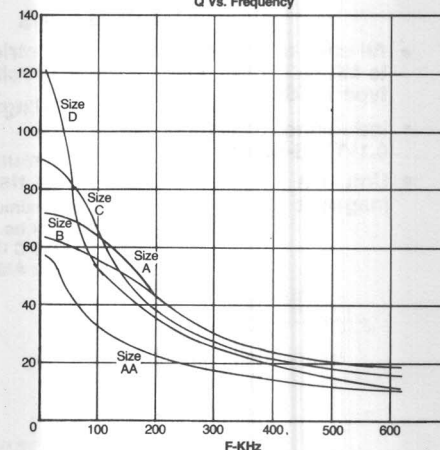
**SIZE C**



**SIZE D**



**Q Vs. Frequency**



Delivery—  
stock to one week

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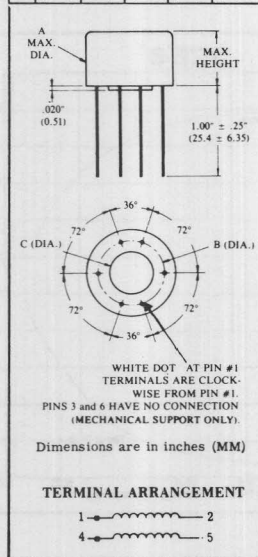
**PLUG-IN**  
Delivery-Stock to 1 week  
For Surface Mount see page 49

# Common EMI Mode Suppression Inductors

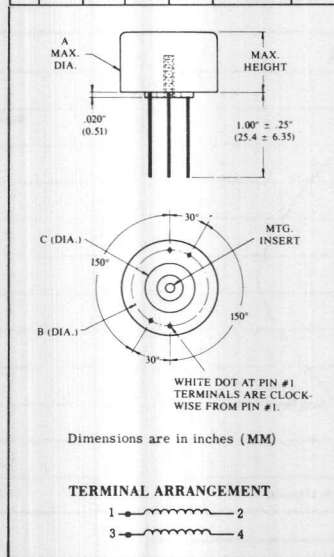
- Minimum possible size
- 130°C operation  
(Ambient + Temp. Rise)
- Windings Balance  $\pm 1\%$
- Dielectric Strength . . .  
1500 Volts RMS
- All units are  
magnetically shielded

These Inductors are well suited for use in Switching Regulators, DC to DC Power Supplies and all types of Electrical Equipment where the elimination of line transmitted Electromagnetic Interference is important. Electrical equipment will generate noise due to switching operations of transistors, SCR's, relays, triacs, etc. By using these Inductors, noise being fed back to the power line is minimized to an acceptable level and this noise will not interfere with other equipment operating on the same power line.

Size	Max. Height	A Max. Dia.	B Bolt Circle	C Stand-Off	Terminal Dia.
1	.280 (7.11)	.410 (10.41)	.260 (6.6)	.160 (4.06)	.012 (.31)
2	.340 (8.53)	.500 (12.7)	.350 (8.89)	.250 (6.35)	.012 (.31)
3	.415 (10.54)	.630 (16.0)	.440 (11.17)	.340 (8.64)	.016 (.41)

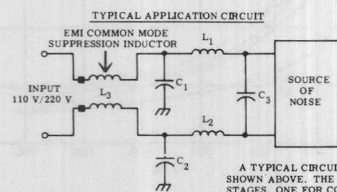


Size	Max. Height	A Max. Dia.	B Bolt Circle	C Stand-Off	Mtg. Insert	Terminal Dia.
4	.500 (12.7)	.800 (20.32)	.560 (14.22)	.460 (11.68)	2-56 UNC 8 Threads Deep	.016 (.41)
5	.650 (16.51)	.950 (24.13)	.670 (17.0)	.570 (14.48)	6-32 UNC 8 Threads Deep	.020 (.51)
6	.745 (18.92)	1.125 (28.57)	.800 (20.32)	.700 (17.78)	6-32 UNC 8 Threads Deep	.020 (.51)



## SPECIFICATIONS

- All units manufactured to MIL-T-27 and are type TF5S04ZZ
- Inductance measured at 0.1VRMS-10kHz
- Unit has magnetic shield
- Dielectric Strength . . .  
1500 Volts RMS
- Windings Balanced  $\pm 1\%$
- Maximum ambient plus temp. rise limited to 130°C (ie maximum ambient of part no. 46283 would be 105°C if IRMS is 1.29 AMPS)



INDUCTANCE	IRMS (AMPS)			RDC. (OHMS) EACH WDG.	APPROX. LEAKAGE INDUCTANCE (MICRO-HENRY)	SIZE	MODEL NUMBER	PRICE 1-9
	TEMP. RISE 60°C	TEMP. RISE 40°C	TEMP. RISE 25°C					
75 MICRO-HENRY	1.95 2.57 4.43	1.57 2.20 3.79	1.29 1.90 3.23	.051 .033 .015	3.5 3.5 4	1 2 3	46283 47291 48381	24.17 24.17 29.01
185 MICRO-HENRY	1.25 1.61 2.80 4.58	1.00 1.39 2.39 3.83	.959 1.19 2.04 3.06	.125 .083 .038 .019	5 5 4.5 4.5	1 2 3 4	46263 47271 48361 49461	24.17 24.17 29.01 29.01
375 MICRO-HENRY	.862 1.14 1.98 3.23 4.70	.691 .986 1.70 2.70 4.18	.572 .851 1.44 2.16 3.04	.263 .163 .075 .037 .021	9 8 8 7.5 6.5	1 2 3 4 5	46243 47251 48341 49441 50241	24.17 24.17 29.01 29.01 29.01
550 MICRO-HENRY	.711 .924 1.62 2.64 3.80	.568 .792 1.38 2.20 3.39	.472 .686 1.18 1.77 2.46	.31 .20 .09 .045 .026	10.3 8.9 8.4 7.7 7.5	1 2 3 4 5	46223 47231 48321 49421 50221	24.17 24.17 29.01 29.01 29.01
750 MICRO-HENRY	.619 .814 1.40 2.29 3.33 5.10	.495 .694 1.20 1.91 2.96 4.23	.410 .601 1.02 1.53 2.15 3.77	.41 .26 .12 .06 .034 .022	13.8 11.9 10.3 10.0 9.4	1 2 3 4 5 6	46203 47211 48301 49401 50201 51303	24.17 24.17 29.01 29.01 29.01 31.85
1.5 MILLI-HENRY	.437 .575 .986 1.61 2.31 3.78	.349 .491 .847 1.36 2.06 3.14	.290 .425 .722 1.08 1.50 2.80	.82 .52 .24 .12 .07 .04	27.5 23.8 22.5 20.6 20 18.8	1 2 3 4 5 6	46183 47191 48281 49381 50181 51283	24.17 24.17 29.01 29.01 29.01 31.85
3 MILLI-HENRY	.308 .405 .708 1.14 1.64 2.53	.246 .345 .605 .959 1.45 2.09	.204 .299 .516 .766 1.06 1.86	1.65 1.05 .47 .24 .14 .09	55 47.5 45.0 41.3 40.0 37.5	1 2 3 4 5 6	46163 47171 48261 49361 50161 51263	24.17 24.17 29.01 29.01 29.01 31.85
6.75 MILLI-HENRY	.205 .270 .468 .769 1.10 1.69	.165 .231 .401 .643 .977 1.41	.136 .200 .342 .516 .711 1.25	3.71 2.36 1.07 .53 .31 .20	123.8 106.9 101.3 92.8 90.0 84.4	1 2 3 4 5 6	46143 47151 48241 49341 50141 51243	24.17 24.17 29.01 29.01 29.01 31.85
12 MILLI-HENRY	.154 .202 .352 .572 .827 1.28	.123 .172 .299 .480 .730 1.06	.101 .150 .255 .378 .528 .942	6.6 4.2 1.9 .95 .55 .35	220 190 180 165 160 150	1 2 3 4 5 6	46123 47131 48221 49321 50121 51223	24.17 24.17 29.01 29.01 29.01 31.85

For immediate engineering assistance or to place an order—Call Toll Free 800-431-1064

## PICO Electronics, Inc.

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Delivery—  
stock to one week

**SURFACE MOUNT**  
Delivery-stock to one week

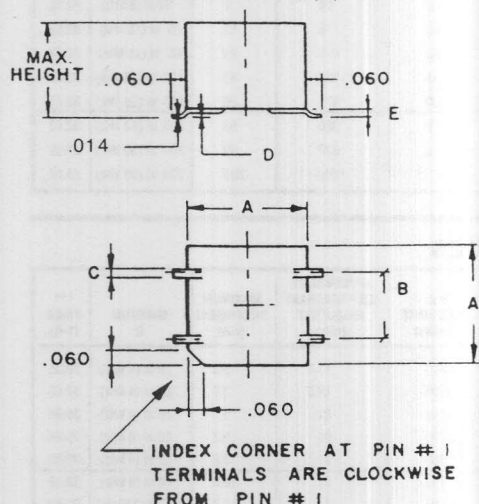
# EMI Common Mode Suppression Inductors

- Minimum possible size
- 130°C operation  
(Ambient + Temp. Rise)
- Windings Balance  $\pm 1\%$
- Dielectric Strength . . . .  
1500 Volts RMS

These Inductors are well suited for use in Switching Regulators, DC to DC Power Supplies and all types of Electrical Equipment where the elimination of line transmitted Electromagnetic Interference is important. Electrical equipment will generate noise due to switching operations of transistors, SCR's, relays, triacs, etc. By using these Inductors, noise being fed back to the power line is minimized to an acceptable level and this noise will not interfere with other equipment operating on the same power line.

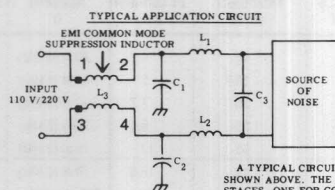
Size	Max. Height	A	B	C	D	E
1	.330 (8.38)	.450 (11.4)	.300 (7.62)	.027 (.686)	.020 (.508)	.033 (.838)
2	.380 (9.65)	.550 (13.9)	.400 (10.1)	.037 (.940)	.025 (.635)	.040 (1.02)
3	.470 (11.9)	.650 (16.5)	.500 (12.7)	.037 (.940)	.025 (.635)	.040 (1.02)

All dimensions are in inches, ( ) = MM



## SPECIFICATIONS

- All units manufactured to MIL-T-27 and are type TF5S04ZZ
- Dielectric Strength . . . .  
1500 Volts RMS
- Windings Balanced  $\pm 1\%$
- Maximum ambient plus temp. rise limited to 130°C



A TYPICAL CIRCUIT FOR THE ELIMINATION OF NOISE IS SHOWN ABOVE. THE FILTER CONTAINS TWO STAGES, ONE FOR COMMON MODE NOISE (L<sub>1</sub>, C<sub>1</sub>, C<sub>2</sub>) AND ONE FOR CONDUCTED NOISE (L<sub>2</sub>, C<sub>3</sub>).

INDUCT- ANCE	IRMS (AMPS)			RDC. (OHMS) EACH WDG.	APPROX. LEAKAGE INDUCTANCE (MICRO- HENRY)	SIZE	MODEL NUMBER	PRICE 1-9
	TEMP. RISE 60°C	TEMP. RISE 40°C	TEMP. RISE 25°C					
50 μH	3.4 6.0 9.9	2.8 5.2 8.2	2.6 4.4 7.2	.0125 .0063 .0033	.40 .34 .29	1 2 3	46470 47570 48670	20.37 20.37 22.40
75 μH	2.6 4.8 8.0	2.1 4.2 6.7	1.9 3.6 5.9	.0212 .0094 .0049	.60 .54 .43	1 2 3	46465 47565 48665	20.37 20.37 22.40
100 μH	2.3 4.2 6.9	1.8 3.7 5.7	1.7 3.1 5.0	.0288 .0125 .0066	.80 .68 .58	1 2 3	46460 47560 48660	20.37 20.37 22.40
250 μH	1.4 2.6 4.4	1.1 2.3 3.7	1.1 1.9 3.3	.070 .0313 .0163	2.0 1.7 1.4	1 2 3	46455 47555 48655	20.37 20.37 22.40
500 μH	1.1 1.8 3.1	.9 1.7 2.6	.8 1.4 2.3	.1250 .0625 .0325	4.0 3.4 2.9	1 2 3	46450 47550 48650	20.37 20.37 22.40
750 μH	.8 1.5 2.6	.7 1.3 2.1	.6 1.1 1.8	.2125 .0938 .0488	6.0 5.1 4.3	1 2 3	46445 47545 48645	20.37 20.37 22.40
1.0 mH	0.81 0.15 2.5	0.66 1.3 2.1	0.61 1.1 1.8	0.23 0.1 0.0530	8.0 6.8 5.750	1 2 3	46440 47540 48640	20.37 20.37 22.40
2.5 mH	0.52 0.96 1.6	0.42 0.84 1.3	0.39 0.71 1.2	0.56 0.25 0.1310	20 17 14.400	1 2 3	46435 47535 48635	20.37 20.37 22.40
5.0 mH	0.37 0.68 1.1	0.3 0.59 0.9	0.28 0.5 0.82	1.1 0.5 0.2630	40 34 28.800	1 2 3	46430 47530 48630	20.37 20.37 22.40
7.5 mH	0.3 0.55 0.9	0.24 0.48 0.8	0.22 0.41 0.67	1.7 0.75 0.3940	60 51 43.100	1 2 3	46425 47525 48625	20.37 20.37 22.40
10 mH	0.26 0.48 0.8	0.21 0.42 0.7	0.19 0.35 0.57	2.3 1.0 0.5300	80.0 68.0 57.5	1 2 3	46420 47520 48620	20.37 20.37 22.40
15 mH	0.21 0.39 0.64	0.17 0.34 0.53	0.16 0.29 0.47	3.4 1.5 0.7900	120 102 86	1 2 3	46415 47515 48615	20.37 20.37 22.40
17.5 mH	0.2 0.36 0.59	0.16 0.32 0.49	0.15 0.27 0.44	3.94 1.75 0.9190	140 119 101	1 2 3	46410 47510 48610	20.37 20.37 22.40
20 mH	0.18 0.34 0.56	0.15 0.30 0.46	0.14 0.25 0.41	4.5 2.0 1.0500	160 136 115	1 2 3	46405 47505 48605	20.37 20.37 22.40

Delivery—  
stock to one week

For immediate engineering assistance or to place an order—Call Toll Free 800-431-1064

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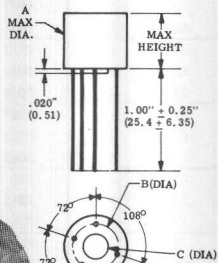


# PICO's miniature HIGH "Q" INDUCTORS

- $\pm 1\%$  inductance stability vs temperature
- Smallest possible size
- Extreme resistance to thermal shock
- Manufactured to Mil-T-27 (TF5R20ZZ)
- All units are magnetically shielded

TYPE	MAX HEIGHT	A MAX DIA.	B BOLT CIRCLE	C STAND-OFF
63000	.325 (7.87)	.430 (10.89)	.260 (6.6)	.160 (4.06)
64000	.360 (8.89)	.530 (13.5)	.350 (8.89)	.250 (6.35)
65000	.480 (12.19)	.670 (17.0)	.440 (11.17)	.340 (8.54)

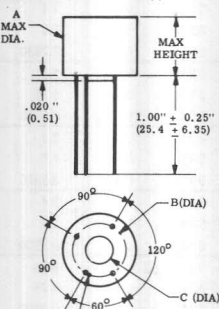
NOTE: ALL DIMENSIONS ARE IN INCHES. ( ) = MM



WHITE DOT AT PIN #1  
TERMINALS ARE CLOCK-  
WISE FROM PIN #1.  
NO CONNECTION TO PIN #1  
AND #3 (MECHANICAL SUPPORT)

TYPE	MAX HEIGHT	A MAX DIA.	B BOLT CIRCLE	C STAND-OFF
66000	.550 (13.97)	.840 (21.34)	.560 (14.22)	.460 (11.68)

NOTE: ALL DIMENSIONS ARE IN INCHES. ( ) = MM



WHITE DOT AT PIN #1  
TERMINALS ARE CLOCK-  
WISE FROM PIN #1.  
NO CONNECTION TO  
PIN #2 AND #4 (MECHANICAL SUPPORT)

ALL INDUCTORS ARE MEASURED AT 0 DC. THE MAXIMUM DC LISTINGS ARE FOR APPROXIMATELY 5% DROP IN INDUCTANCE AND NEGLIGIBLE HEAT RISE. THE CHANGE OF INDUCTANCE WITH AC OR DC CURRENTS IS ILLUSTRATED BY THE CURVES SHOWN FOR EACH INDUCTOR TYPE. THE EXCITATION IS PLOTTED IN mA X  $\sqrt{\text{mH}}$ . FOR EXAMPLE THE 10 mH INDUCTOR (64314) WITH 79 mA DC FLOWING WILL HAVE AN EXCITATION OF  $\text{mA} \times \sqrt{\text{mH}} = 79 \times \sqrt{10} = 250$  AND THE INDUCTANCE WILL DROP FROM 10 mH TO 9mH. IF THE 79 mA WAS AC THE INDUCTANCE WOULD BE 9.65 mH.

For immediate engineering assistance or to order—  
Call Toll Free 800-431-1064

**PICO Electronics, Inc.**  
453 N. MacQuesten Pkwy. Mt. Vernon, N.Y. 10552  
914-699-5514 • FAX 914-699-5565

## "63000" SERIES

PART NUMBER	INDUCTANCE	D.C. RESISTANCE (OHMS)	APPROXIMATE SELF RESONANT FREQUENCY (KHz)	MAXIMUM DC CURRENT (mA)	MINIMUM Q	*** PRICE (1-9)
63120	1 Hy	1840	47	5.7	30 at (15 kHz)	35.88
63140	750 mH	1380	54	6.6	30 at (15 kHz)	34.63
63160	500 mH	920	66	8	30 at (15 kHz)	32.62
63180	200 mH	368	105	12.5	60 at (25 kHz)	32.62
63200	100 mH	185	148	18	60 at (25 kHz)	32.62
63220	75 mH	140	172	20.8	100 at (50 kHz)	32.62
63240	50 mH	90	210	25.5	100 at (50 kHz)	32.62
63260	30 mH	55	270	33	100 at (50 kHz)	32.62
63280	20 mH	37	332	40	100 at (50 kHz)	32.62
63300	15 mH	28	383	46	100 at (50 kHz)	32.62
63320	10 mH	18.5	470	57	100 at (50 kHz)	32.62
63340	5 mH	10	665	80	100 at (50 kHz)	32.62
63360	1 mH	2	1480	180	100 at (50 kHz)	35.88

## "64000" SERIES

PART NUMBER	INDUCTANCE	D.C. RESISTANCE (OHMS)	APPROXIMATE SELF RESONANT FREQUENCY (KHz)	MAXIMUM DC CURRENT (mA)	MINIMUM Q	*** PRICE (1-9)
64114	5 Hy	3000	17	2.8	15 at (4 kHz)	39.05
64134	3 Hy	1800	22	3.6	30 at (6 kHz)	37.66
64154	2 Hy	1200	27	4.4	30 at (6 kHz)	35.88
64174	1 Hy	600	38	6.3	30 at (6 kHz)	32.62
64194	750 mH	450	44	7.3	30 at (6 kHz)	32.62
64214	500 mH	300	54	9	30 at (6 kHz)	32.62
64234	250 mH	150	76	13	65 at (15 kHz)	32.62
64254	100 mH	60	120	20	65 at (15 kHz)	32.62
64274	75 mH	45	139	23	120 at (25 kHz)	32.62
64294	50 mH	30	170	28	120 at (25 kHz)	32.62
64314	10 mH	6	380	63	200 at (50 kHz)	32.62
64334	5 mH	3	537	89	200 at (50 kHz)	32.62
64354	1 mH	.6	1200	200	200 at (50 kHz)	35.88

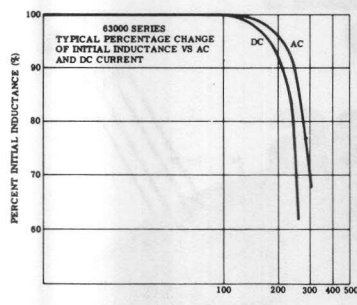
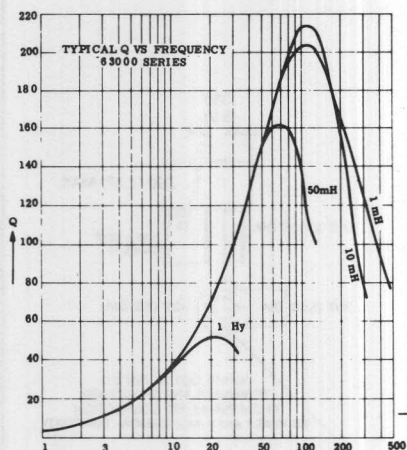
## "65000" SERIES

PART NUMBER	INDUCTANCE	D.C. RESISTANCE (OHMS)	APPROXIMATE SELF RESONANT FREQUENCY (KHz)	MAXIMUM DC CURRENT (mA)	MINIMUM Q	*** PRICE (1-9)
65413	10 Hy	3800	11.7	2.8	28 at (4 kHz)	39.05
65433	5 Hy	1900	16.5	3.9	28 at (4 kHz)	37.66
65453	3 Hy	1140	21	5.1	28 at (4 kHz)	35.88
65473	2 Hy	760	26	6.3	56 at (6 kHz)	35.88
65493	1 Hy	380	37	8.8	56 at (6 kHz)	32.62
65513	500 mH	190	52	12.5	56 at (6 kHz)	32.62
65533	250 mH	95	74	17.7	140 at (15 kHz)	32.62
65553	100 mH	38	117	28	140 at (15 kHz)	32.62
65573	50 mH	19	165	39.6	240 at (25 kHz)	32.62
65593	10 mH	3.8	370	88.5	240 at (25 kHz)	32.62

## "66000" SERIES

PART NUMBER	INDUCTANCE	D.C. RESISTANCE (OHMS)	APPROXIMATE SELF RESONANT FREQUENCY (KHz)	MAXIMUM DC CURRENT (mA)	MINIMUM Q	*** PRICE (1-9)
66218	10 Hy	2200	11	4.2	40 at (4 kHz)	39.05
66238	5 Hy	1100	15.7	6	40 at (4 kHz)	37.66
66258	3 Hy	660	20	7.7	70 at (6 kHz)	37.66
66278	2 Hy	440	25	9.4	70 at (6 kHz)	32.66
66298	1 Hy	220	35	13	70 at (6 kHz)	32.66
66318	500 mH	110	49	18.8	70 at (6 kHz)	32.66
66338	250 mH	55	70	26.6	200 at (15 kHz)	32.66
66358	100 mH	22	110	42	200 at (15 kHz)	32.66
66378	50 mH	11	156	59	200 at (15 kHz)	32.66
66398	10 mH	2.2	350	133	200 at (15 kHz)	32.66

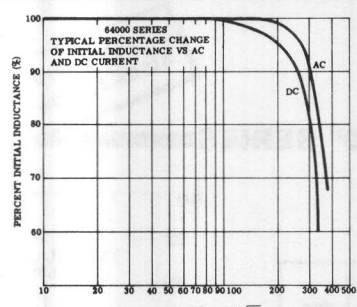
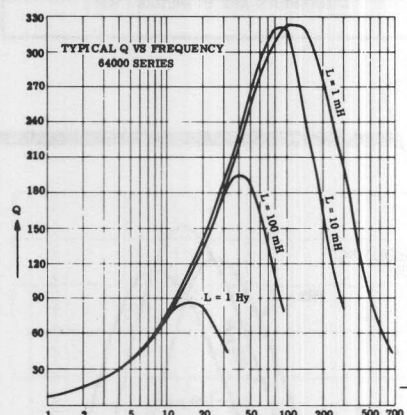
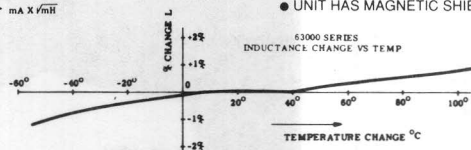
\*\*\* Discount Prices: 1-9 Net; 10-24 less 10%; 25-49 less 16%; 50-99 less 23%; 100-499 less 30%  
Ordering Instruction: No minimum. Net 30 days F.O.B. Mt. Vernon, New York.



#### SPECIFICATIONS:

#### "63000" SERIES

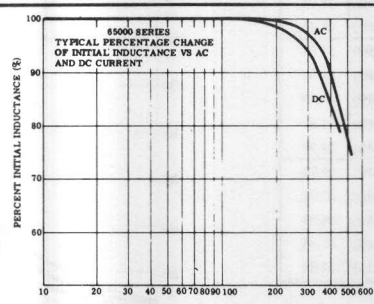
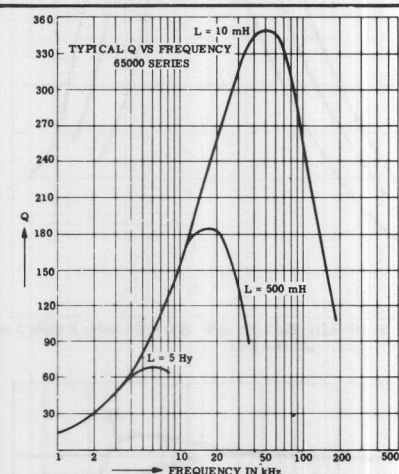
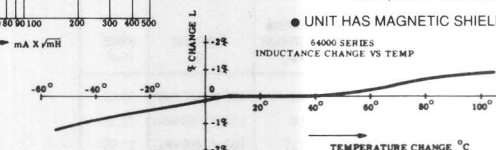
- INDUCTANCE TOLERANCE  
± 3% AT .1V - 4 kHz.
- INDUCTANCE STABILITY VS TEMP.  
± 1% - 30° TO + 105°C  
+ 1% - 55°C TO + 105°C  
- 2%
- MANUFACTURED TO MIL-T-27 (MIL TYPE TF5R20ZZ)
- WEIGHT 3.5 GRAMS
- THERMAL SHOCK:  
100 CYCLES, METHOD 107D, MIL-STD  
202 E, TEST CONDITION A-3
- UNIT HAS MAGNETIC SHIELD



#### SPECIFICATIONS:

#### "64000" SERIES

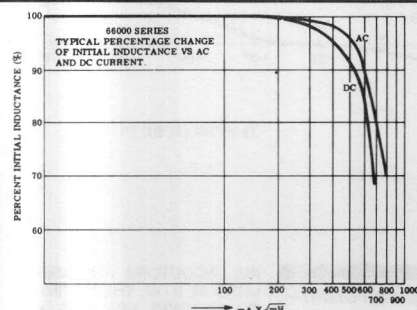
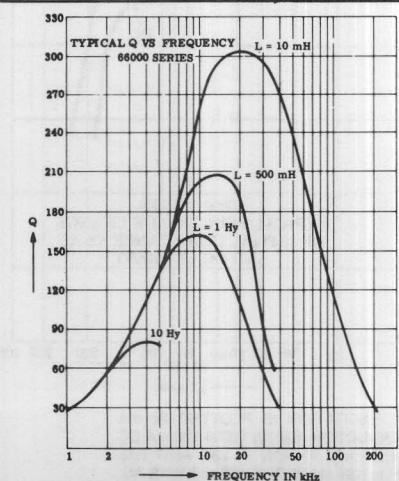
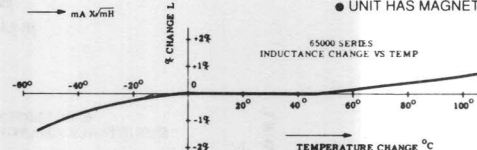
- INDUCTANCE TOLERANCE  
± 3% AT .1V - 2 kHz.
- INDUCTANCE STABILITY VS TEMP.  
± 1% - 30° TO + 105°C  
+ 1% - 55°C TO + 105°C  
- 2%
- MANUFACTURED TO MIL-T-27 (MIL TYPE TF5R20ZZ)
- WEIGHT 6 GRAMS
- THERMAL SHOCK:  
100 CYCLES, METHOD 107D, MIL-STD  
202 E, TEST CONDITION A-3
- UNIT HAS MAGNETIC SHIELD



#### SPECIFICATIONS:

#### "65000" SERIES

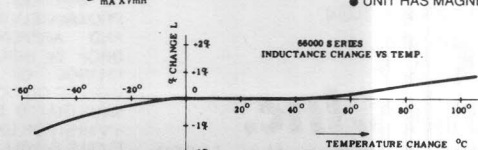
- INDUCTANCE TOLERANCE  
± 3% AT .1V - 1 kHz.
- INDUCTANCE STABILITY VS TEMP.  
± 1% - 30° TO + 105°C  
+ 1% - 55°C TO + 105°C  
- 2%
- MANUFACTURED TO MIL-T-27 (MIL TYPE TF5R20ZZ)
- WEIGHT 12 GRAMS
- THERMAL SHOCK:  
100 CYCLES, METHOD 107D, MIL-STD  
202 E, TEST CONDITION A-3
- UNIT HAS MAGNETIC SHIELD



#### SPECIFICATIONS:

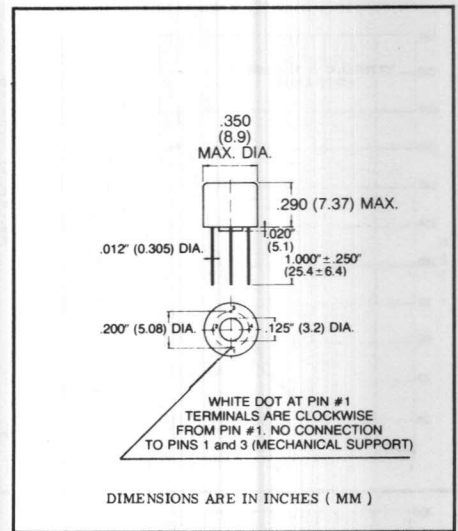
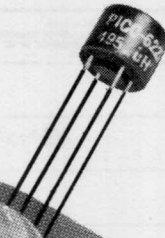
#### "66000" SERIES

- INDUCTANCE TOLERANCE  
± 3% AT .1V - 4 kHz.
- INDUCTANCE STABILITY VS TEMP.  
± 1% - 30° TO + 105°C  
+ 1% - 55°C TO + 105°C  
- 2%
- MANUFACTURED TO MIL-T-27 (MIL TYPE TF5R20ZZ)
- WEIGHT 22 GRAMS
- THERMAL SHOCK:  
100 CYCLES, METHOD 107D, MIL-STD  
202 E, TEST CONDITION A-3
- UNIT HAS MAGNETIC SHIELD



# PICO's ultra-miniature HIGH "Q" INDUCTORS

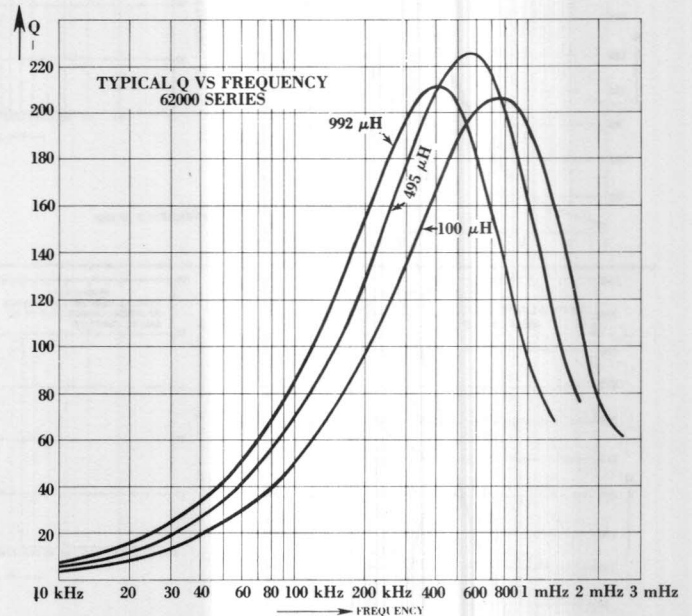
- $\pm 2\%$  inductance stability vs temperature
- Smallest possible size
- Extreme resistance to thermal shock
- Manufactured to Mil-T-27 (TF5R20ZZ)
- All units are magnetically shielded
- Non-standard inductance values available at 10% higher cost than nearest standard inductor.



Delivery—  
stock to one week

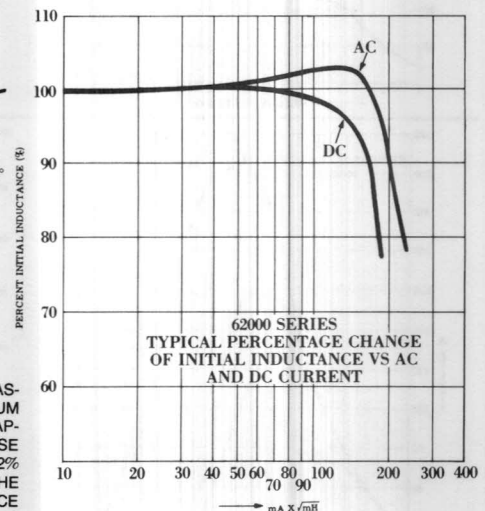
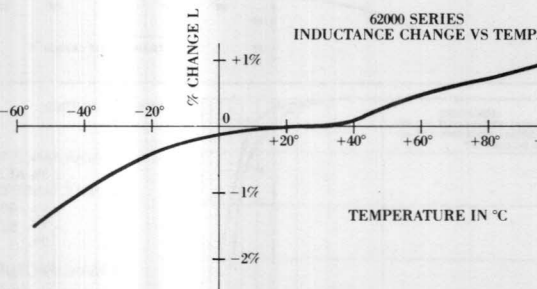
## "62000" SERIES

PART NUMBER	INDUCTANCE (MICRO-HENRYS)	D.C. RESISTANCE (OHMS)	APPROXIMATE SELF RESONANT FREQUENCY (MHz)	MAXIMUM DC CURRENT (mA)	MINIMUM Q	PRICE (1-9)
62112	2500	18	1.15	80	130 at (400 kHz)	31.90
62132	1500	10	1.5	100	130 at (400 kHz)	31.90
62152	992	7	1.8	125	160 at (400 kHz)	31.90
62172	900	6.5	1.9	130	160 at (400 kHz)	31.90
62192	800	6.0	2.1	140	160 at (400 kHz)	31.90
62212	742	5.7	2.3	150	150 at (500 kHz)	31.90
62232	702	5.5	2.5	155	150 at (500 kHz)	31.90
62252	700	5.0	2.7	160	160 at (500 kHz)	31.90
62272	695	4.5	3	170	160 at (500 kHz)	31.90
62292	400	3.7	3.3	185	160 at (500 kHz)	31.90
62312	298	2.8	3.8	215	170 at (500 kHz)	31.90
62332	248	2.3	4.2	235	170 at (500 kHz)	31.90
62352	196	1.8	4.75	265	160 at (500 kHz)	31.90
62372	150	1.4	5.5	300	160 at (500 kHz)	31.90
62392	100	1.2	6.8	330	140 at (400 kHz)	31.90



### SPECIFICATIONS

- INDUCTANCE TOLERANCE  $\pm 4\%$  AT 0.1V-100KHZ
- INDUCTANCE STABILITY VS TEMPERATURE  $\pm 2\%$  -55°C to 105°C
- MANUFACTURED TO MIL-T-27 TF5R20ZZ
- WEIGHT 2 GRAMS
- THERMAL SHOCK 100 CYCLES, METHOD 107D MIL-STD 202E TEST CONDITION A3
- UNIT HAS MAGNETIC SHIELD



For immediate engineering assistance or to place an order—  
Call Toll Free 800-431-1064

**PICO  
Electronics, Inc.**

453 North MacQuesten Pkwy., Mt. Vernon, N. Y. 10552  
914-699-5514 • FAX 914-699-5565

ALL INDUCTORS ARE MEASURED AT 0 DC. THE MAXIMUM DC LISTINGS ARE FOR APPROXIMATELY 30°C HEAT RISE AND APPROXIMATELY 2% DROP IN INDUCTANCE. THE CHANGE OF INDUCTANCE WITH AC OR DC CURRENTS IS ILLUSTRATED BY THE CURVES. THE EXCITATION IS PLOTTED IN  $\text{mA} \times \sqrt{\text{mH}}$ . FOR EXAMPLE THE 0.495 mH INDUCTOR (62272) WITH 170 mA DC FLOWING WILL HAVE AN EXCITATION OF  $\text{mA} \times \sqrt{\text{mH}} = 120$ , AND THE INDUCTANCE WILL DROP FROM 495  $\mu$ H TO 485  $\mu$ H. IF THE 170 mA WAS AC, THE INDUCTANCE WOULD BE 510  $\mu$ H.



# PICO Electronics, Inc.

For engineering assistance or to place an order—Call Toll Free 800-431-1064 • In New York 914-699-5514  
453 N. MacQuesten Pkwy., Mt. Vernon, N.Y. 10552 • FAX 914-699-5565

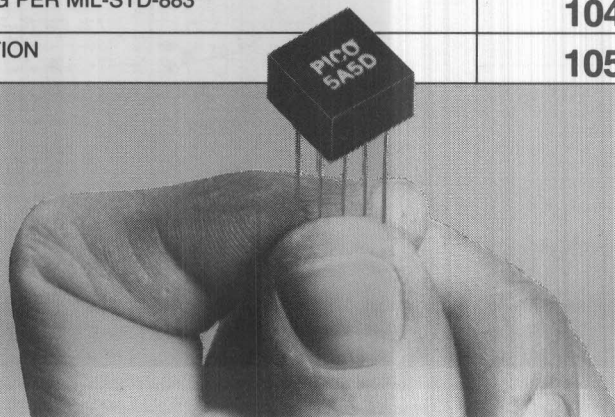
## Hi-Reliability Ultra-Miniature DC-DC Converters

**New Series AV**  
up to 1000 VDC Output  
See pages 56–57

**New Series AT/DT**  
.200 height—  
up to .75 Watts.  
See pages 58–59

- OPTIONS AVAILABLE**
- Expanded operating temp. (–55°C to +85°C)
  - Stabilization Bake (125°C ambient)
  - Temperature Cycle (–55°C to +125°C)
  - Hi Temp, full power burn in (100% power, 125°C case temp)

	Page	
DC-DC CONVERTERS . . . Series A <i>Single and Dual, .5" × .5" × .3" ht., up to 1.25 Watts</i>	54	55
DC-DC CONVERTERS . . . Series AV <i>Up to 1000 Volts DC Output 1.25 Watts</i>	56	57
DC-DC CONVERTERS . . . Series AT/DT <i>Single and Dual, .200" ht., up to .75 Watts</i>	58	59
DC-DC CONVERTERS . . . Series B <i>Single and Dual, .7" × 1.12" × .3" ht., up to 2.5 Watts</i>	60	61
DC-DC CONVERTERS . . . Series C <i>Single and Dual, 1.12" × 1.24" × .3" ht., up to 4 Watts</i>	62	63
DC-DC CONVERTERS . . . Series E <i>Single 1.24" × 1.43" × .4" ht.-Dual 1.12" × 2" × .4" ht., up to 7 Watts</i>	64	65
DC-DC CONVERTERS . . . Series FR, Regulated <i>Single and Dual .5" × 1" × .3" ht. up to 1 Watt</i>	66	
DC-DC CONVERTERS . . . Series GR, Regulated <i>Single and Dual 1.125" × 2.25" × .350" ht. up to 3.5 Watts</i>	67	
MILITARY DC-DC CONVERTERS . . . Series M <i>Single and Dual, up to 1.25 Watts</i>	68	69
MILITARY DC-DC CONVERTERS . . . Series MR <i>Wide Input Voltage, Single and Dual Outputs, up to 2½ Watts</i>	70	71
DC-DC CONVERTERS . . . Series LR, Regulated, Isolated <i>Single and Dual Outputs, Wide Input Range 5 to 60 Volts, up to 5 Watts</i>	72	73
DC-DC CONVERTERS . . . Series PLR Regulated <i>Single and Dual Outputs, Wide Input Range up to 5 Watts, .300" max. ht.</i>	74	75
DC-DC CONVERTERS . . . Series IR, Regulated, Isolated <i>Single and Dual Outputs, Wide Input Range 5 to 60 Volts, up to 10 Watts</i>	76	77
DC-DC CONVERTERS . . . Series JR, Regulated, Isolated <i>Single and Dual Outputs, Wide Input Range 18 to 60 Volts, up to 15 Watts</i>	78	79
DC-DC CONVERTERS . . . Series KR, Regulated, Isolated <i>Single and Dual Outputs, Wide Input Range 18 to 60 Volts, up to 20 Watts</i>	80	81
DC-DC CONVERTERS . . . Series NR, Regulated <i>Single, Dual and New Triple Outputs, Wide Input 18 to 72 Volts, up to 30 Watts</i>	82	83
DC-DC CONVERTERS . . . Series LV, Regulated, Isolated <i>Wide Input 36-80 VDC, up to 10 Watts</i>	84	85
DC-DC CONVERTERS . . . Series HV, Regulated, Isolated <i>Wide Input 70-170 VDC, up to 15 Watts</i>	86	87
DC-DC CONVERTERS . . . Series HR, and HRL, Regulated <i>Single Output up to 12 Watts</i>	88	
AC-DC POWER SUPPLIES SECTION	89 thru	103
OPTIONAL SCREENING PER MIL-STD-883	104	
ORDERING INFORMATION	105	



# SERIES A

## OPTIONS AVAILABLE

- Expanded operating temp (-55°C to +85°C)
- Stabilization Bake (125°C ambient)
- Temperature Cycle (-55°C to +125°C)
- Hi Temp, full power burn in (100% power, 125°C case temp)

## Hi Reliability Ultra-Miniature DC-DC Converters

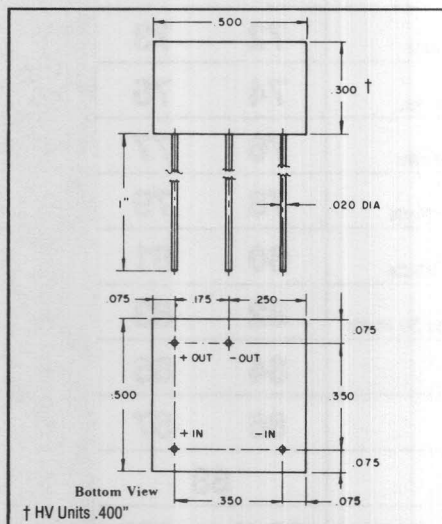


## FEATURES

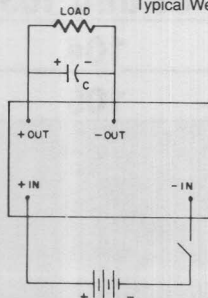
- Up to 1.25 watt output at 70°C ambient
- Encapsulated semiconductors, conservatively rated for maximum reliability
- Ultra-miniature size (0.3" Height)
- 5 input voltage ranges 5, 12, 24, 28 and 48V DC
- 100 megohm @ 500V DC isolation
- Input/output isolation
- Single and dual output
- No heat sink required
- Up to 250V Output

**New Series AT/DT  
.200 height—  
up to .75 Watts.  
See pages 58-59**

This series of unregulated DC-DC converters are produced in an ultra-miniature encapsulated package. 84 different models are available. The units feature single and dual outputs. They will operate over the temperature range of -25°C to +70°C. No heat sink is required.



Typical Weight: 3.5 Grams



## SERIES A - SINGLE OUTPUT

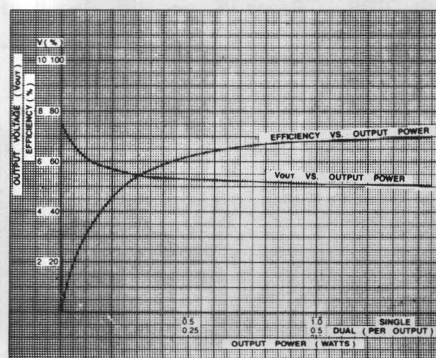
PICO PART NUMBER	INPUT VOLTAGE (V DC)	OUTPUT VOLTAGE (V DC)	MAX. LOAD CURRENT (mA)	MAX. OUTPUT POWER (watts)	EFF. @ FULL LOAD TYPICAL (%)	INPUT CURRENT FULL LOAD TYPICAL (mA)	OUTPUT VOLTAGE RIPPLE @ FULL LOAD* (Vp-p max)	NO LOAD CURRENT TYPICAL (mA)	FULL LOAD OUTPUT VOLTAGE TOLERANCE (V DC)	PRICE 1-24
5A5S	5	5	200	1	66	303	0.20	65	±0.25	56.55
5A9S	5	9	139	1.25	73	342	0.15	80	±0.3	56.55
5A12S	5	12	104	1.25	73	342	0.15	80	±0.4	56.55
5A15S	5	15	83	1.25	75	333	0.12	90	±0.4	56.55
5A24S	5	24	52	1.25	75	333	0.10	90	±0.5	56.55
5A28S	5	28	45	1.25	74	338	0.10	90	±0.5	56.55
5A48S	5	48	26	1.25	77	325	0.10	90	±0.7	56.55
5A100S	5	100	12.5	1.25	78	321	0.90	90	±3.0	80.12 †
5A150S	5	150	8.3	1.25	76	329	0.90	100	±3.0	80.12 †
5A200S	5	200	6.25	1.25	75	333	0.90	100	±3.0	80.12 †
5A250S	5	250	5	1.25	75	333	0.90	100	±3.0	80.12 †
12A5S	12	5	200	1	66	126	0.20	24	±0.25	56.55
12A9S	12	9	139	1.25	74	141	0.15	26	±0.3	56.55
12A12S	12	12	104	1.25	76	137	0.15	26	±0.4	56.55
12A15S	12	15	83	1.25	78	134	0.15	26	±0.4	56.55
12A24S	12	24	52	1.25	78	134	0.15	26	±0.5	56.55
12A28S	12	28	45	1.25	77	135	0.15	26	±0.5	56.55
12A48S	12	48	26	1.25	80	130	0.20	26	±0.7	56.55
12A100S	12	100	12.5	1.25	80	130	0.90	30	±3.0	80.12 †
12A150S	12	150	8.3	1.25	79	132	0.90	35	±3.0	80.12 †
12A200S	12	200	6.25	1.25	78	134	0.90	35	±3.0	80.12 †
12A250S	12	250	5	1.25	75	139	0.90	40	±3.0	80.12 †
24A5S	24	5	200	1	66	63	0.20	13	±0.25	56.55
24A9S	24	9	139	1.25	72	72	0.20	15	±0.3	56.55
24A12S	24	12	104	1.25	75	69	0.20	15	±0.4	56.55
24A15S	24	15	83	1.25	75	69	0.20	15	±0.4	56.55
24A24S	24	24	52	1.25	78	67	0.20	15	±0.5	56.55
24A28S	24	28	45	1.25	77	68	0.20	15	±0.5	56.55
24A48S	24	48	26	1.25	78	67	0.25	16	±0.7	56.55
24A100S	24	100	12.5	1.25	76	69	0.90	20	±3.0	80.12 †
24A150S	24	150	8.3	1.25	73	71	0.90	25	±3.0	80.12 †
24A200S	24	200	6.25	1.25	73	71	0.90	25	±3.0	80.12 †
24A250S	24	250	5	1.25	70	74	0.90	25	±3.0	80.12 †
28A5S	28	5	200	1	66	54	0.20	12	±0.25	56.55
28A9S	28	9	139	1.25	72	62	0.20	14	±0.3	56.55
28A12S	28	12	104	1.25	72	62	0.20	14	±0.4	56.55
28A15S	28	15	83	1.25	73	61	0.20	14	±0.4	56.55
28A24S	28	24	52	1.25	76	59	0.20	14	±0.5	56.55
28A28S	28	28	45	1.25	76	59	0.20	14	±0.5	56.55
28A48S	28	48	26	1.25	77	58	0.25	15	±0.7	56.55
28A100S	28	100	12.5	1.25	75	60	0.90	20	±3.0	80.12 †
28A150S	28	150	8.3	1.25	76	59	0.90	25	±3.0	80.12 †
28A200S	28	200	6.25	1.25	75	60	0.90	25	±3.0	80.12 †
28A250S	28	250	5	1.25	70	64	0.90	25	±3.0	80.12 †
48A5S	48	5	200	1	66	32	0.25	6	±0.25	60.70
48A9S	48	9	139	1.25	72	36	0.25	8	±0.3	60.70
48A12S	48	12	104	1.25	73	36	0.25	8	±0.4	60.70
48A15S	48	15	83	1.25	72	36	0.25	8	±0.4	60.70
48A24S	48	24	52	1.25	76	34	0.25	9	±0.5	60.70
48A28S	48	28	45	1.25	76	34	0.25	9	±0.5	60.70

\*For units with output voltages up to 48 volts, ripple is measured with 10μF, 75 volt high quality tantalum capacitor which is required across the output.

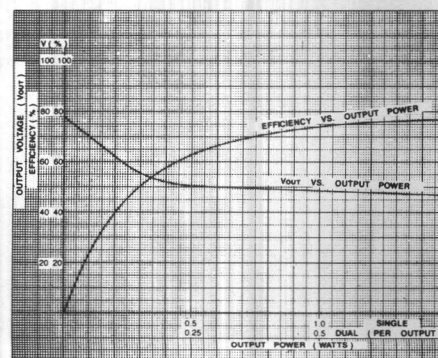
For units with output voltage of 100-250 volts use A 0.1μF, 300 volt capacitor which is required across output, and maintain at least 10% of rated load to prevent a voltage surge.

† HV Units .400"

## SERIES A SINGLE & DUAL 12V-5V



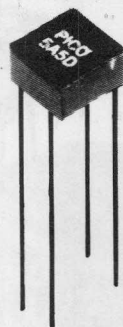
## SERIES A SINGLE & DUAL 5V-48V





**Low Profile .5" x .5" x .3" Height!**  
... up to 1.25 Watts

**No Heat Sink  
or Electrical  
Derating Required**



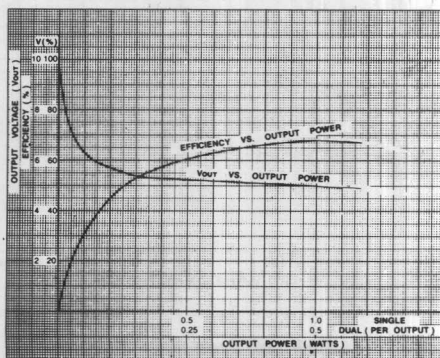
### SERIES A - DUAL OUTPUT

PICO PART NUMBER	INPUT VOLTAGE (V DC)	DUAL OUTPUT VOLTAGE (V DC)	MAX. LOAD CURRENT PER OUTPUT (mA)	MAX. OUTPUT POWER PER OUTPUT (watts)	EFF. @ FULL LOAD TYPICAL (%)	INPUT CURRENT FULL LOAD TYPICAL (mA)	OUTPUT VOLTAGE RIPPLE @ FULL LOAD* (Vp-p max)	NO LOAD CURRENT TYPICAL (mA)	FULL LOAD OUTPUT VOLTAGE TOLERANCE (V DC)	PRICE 1-24
5A5D	5	±5	100	0.5	66	303	0.20	65	±0.25	63.93
5A9D	5	±9	69	0.625	73	342	0.15	80	±0.3	63.93
5A12D	5	±12	52	0.625	73	342	0.15	80	±0.4	63.93
5A15D	5	±15	42	0.625	75	333	0.12	90	±0.4	63.93
5A24D	5	±24	26	0.625	75	333	0.10	90	±0.5	63.93
5A28D	5	±28	22	0.625	74	338	0.10	90	±0.5	63.93
5A48D	5	±48	13	0.625	77	325	0.10	90	±0.7	63.93
12A5D	12	±5	100	0.5	66	126	0.20	24	±0.25	63.93
12A9D	12	±9	69	0.625	74	141	0.15	26	±0.3	63.93
12A12D	12	±12	52	0.625	76	137	0.15	26	±0.4	63.93
12A15D	12	±15	42	0.625	78	134	0.15	26	±0.4	63.93
12A24D	12	±24	26	0.625	78	134	0.15	26	±0.5	63.93
12A28D	12	±28	22	0.625	77	135	0.15	26	±0.5	63.93
12A48D	12	±48	13	0.625	80	130	0.20	26	±0.7	63.93
24A5D	24	±5	100	0.5	66	63	0.20	13	±0.25	63.93
24A9D	24	±9	69	0.625	72	72	0.20	15	±0.3	63.93
24A12D	24	±12	52	0.625	75	69	0.20	15	±0.4	63.93
24A15D	24	±15	42	0.625	75	69	0.20	15	±0.4	63.93
24A24D	24	±24	26	0.625	78	67	0.20	15	±0.5	63.93
24A28D	24	±28	22	0.625	77	68	0.20	15	±0.5	63.93
24A48D	24	±48	13	0.625	78	67	0.25	16	±0.7	63.93
28A5D	28	±5	100	0.5	66	54	0.20	12	±0.25	63.93
28A9D	28	±9	69	0.625	72	62	0.20	14	±0.3	63.93
28A12D	28	±12	52	0.625	72	62	0.20	14	±0.4	63.93
28A15D	28	±15	42	0.625	73	61	0.20	14	±0.4	63.93
28A24D	28	±24	26	0.625	76	59	0.20	14	±0.5	63.93
28A28D	28	±28	22	0.625	76	59	0.20	14	±0.5	63.93
28A48D	28	±48	13	0.625	77	58	0.25	15	±0.7	63.93
48A5D	48	±5	100	0.5	66	32	0.25	6	±0.25	68.63
48A9D	48	±9	69	0.625	72	36	0.25	8	±0.3	68.63
48A12D	48	±12	52	0.625	73	36	0.25	8	±0.4	68.63
48A15D	48	±15	42	0.625	72	36	0.25	8	±0.4	68.63
48A24D	48	±24	26	0.625	76	34	0.25	9	±0.5	68.63
48A28D	48	±28	22	0.625	76	34	0.25	9	±0.5	68.63

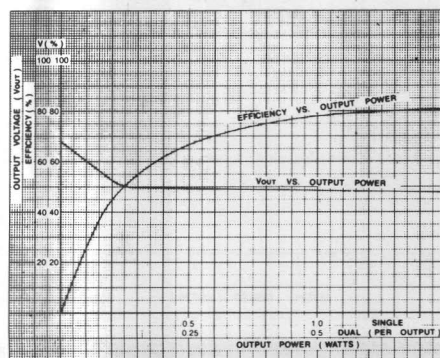
\*For units with output voltages up to 48 volts, ripple is measured with 10 $\mu$ F, 75 volt high quality tantalum capacitor which is required across each output.

Ordering Instructions: No minimum. Net 30 days F.O.B. Mt. Vernon, New York.

### SERIES A SINGLE & DUAL 5V-5V



### SERIES A SINGLE & DUAL 12V-48V



### TYPICAL CHARACTERISTICS:

Test conditions: 25°C ambient and input voltage at nominal value unless otherwise specified.

LINE REGULATION: OUTPUT IS DIRECTLY PROPORTIONAL TO THE INPUT

Input voltage range: 5V models 4 to 6.5V DC  
12V models 9 to 15V DC  
24V models 17 to 28V DC  
28V models 21 to 32V DC  
48V models 25 to 50V DC

Output voltage tolerance at full load:  
5V models  $\pm 0.25$ V  
9V models  $\pm 0.3$ V  
12V & 15V models  $\pm 0.4$ V  
24V & 28V models  $\pm 0.5$ V  
48V models  $\pm 0.7$ V  
100V, 150V, 200V &  
250V models  $\pm 3.0$ V

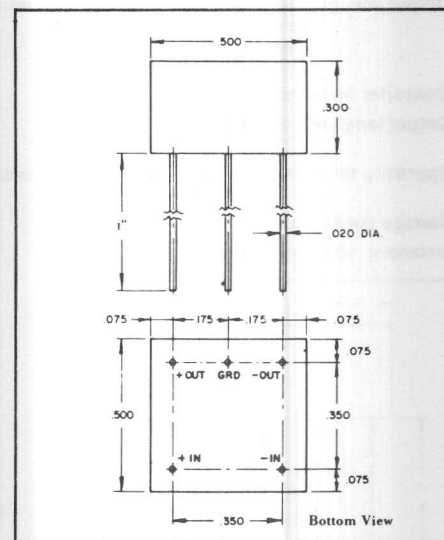
Converter frequency: 20 - 40 KHz

Output temperature coefficient:  
0.05%/°C for 5V output.  
0.04%/°C for 12 & 15V output.  
0.02%/°C for 24, 28, 48, 100,  
150, 200 and 250 volt outputs

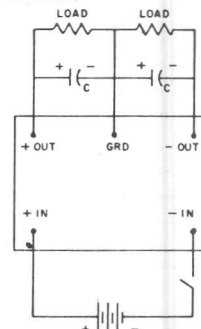
Operating temperature: -25°C to +70°C ambient.  
No heat sink is required.

Storage temperature: -55°C to +125°C

Isolation: 100 megohms min. @ 500V DC



Typical Weight: 3.5 Grams



**PICO**  
**Electronics, Inc.**

453 North Mac Questen Pkwy.  
Mt. Vernon, New York 10552

Delivery—  
stock to one week

For immediate engineering assistance or to place an order—Call Toll Free 800-431-1064 • 914-699-5514 • FAX 914-699-5565



# SERIES AV

## Hi Voltage Hi Reliability Ultra-Miniature Isolated DC-DC Converters

- OPTIONS AVAILABLE**
- Expanded operating temp (-55°C to +85°C)
  - Stabilization Bake (125°C ambient)
  - Temperature Cycle (-55°C to +125°C)
  - Hi Temp, burn in

**.400 ht. up to 500 VDC output**



- 1.25 watt output at 70° ambient
- Ultra-miniature size 0.400" height, 4.0 grams weight, 0.1 cubic inches volume
- 4 input voltage ranges 5, 12, 24 and 28 VDC
- 100 megohm @ 1000 VDC input/output isolation
- MIL-STD 883 options available
- No heat sink or electrical derating required

This series of unregulated high voltage DC-DC converters are produced in an ultra-miniature encapsulated package. 36 different models are available. These single output isolated units will operate over the temperature range of -25° to +70°C with no heat sink or electrical derating. For military applications an operating temperature range -55°C to +85°C is available. An optional environmental screening package per MIL-STD-883 is also available.

### TYPICAL CHARACTERISTICS:

**Test conditions:** 25°C ambient and input voltage at nominal value unless otherwise specified.

**LINE REGULATION:** OUTPUT IS DIRECTLY PROPORTIONAL TO THE INPUT

**Input voltage range:** ± 10% all models

**Output voltage tolerance at full load-nominal input:**  
See chart for specific model.  
Please keep loaded to minimum of 10% at all times.

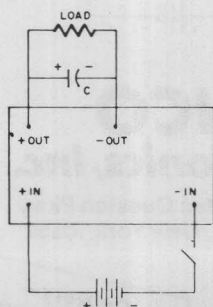
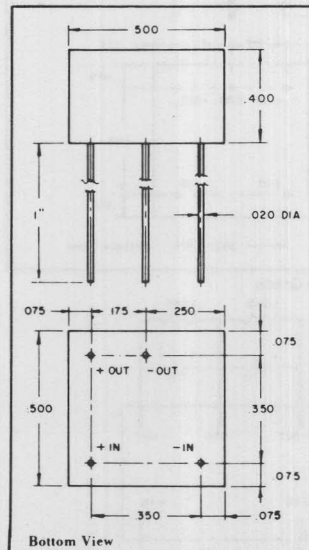
**Converter frequency:** 20 - 40 KHz

**Output temperature coefficient:**  
0.02%/°C for all models

**Operating temperature:** -25°C to +70°C ambient.  
No heat sink.

**Storage temperature:** -55°C to +125°C

**Isolation:** 100 megohms min. @ 1000V DC



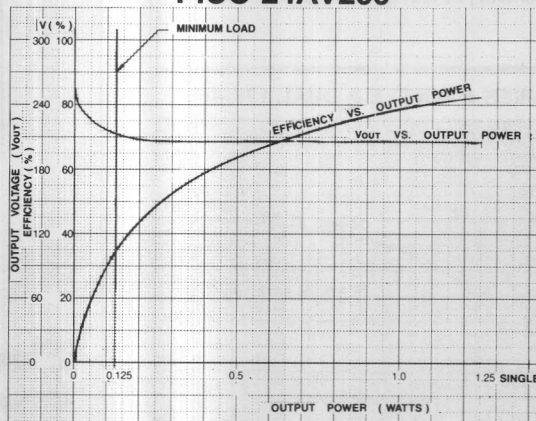
### SERIES AV - SINGLE OUTPUT

PICO PART NUMBER	INPUT VOLTAGE (V DC)	OUTPUT VOLTAGE (V DC)	MAX. LOAD CURRENT (mA)	MAX. OUTPUT POWER (watts)	EFF. @ FULL LOAD TYPICAL (%)	INPUT CURRENT FULL LOAD TYPICAL (mA)	OUTPUT VOLTAGE RIPPLE @ FULL LOAD (Vp-p max)	FULL LOAD OUTPUT VOLTAGE TOLERANCE (V DC)	PRICE 1-24
5AV100	5	100	12.50	1.25	78	321	0.90	±3.0	80.12
5AV150	5	150	8.30	1.25	76	329	0.90	±3.0	80.12
5AV200	5	200	6.25	1.25	75	333	0.90	±3.0	80.12
5AV250	5	250	5.00	1.25	75	333	0.90	±3.0	80.12
5AV300	5	300	4.16	1.25	70	357	1.20	±5.0	99.00
5AV350	5	350	3.57	1.25	70	357	1.20	±5.0	99.00
5AV400	5	400	3.12	1.25	70	357	1.20	±5.0	99.00
5AV450	5	450	2.77	1.25	70	357	1.50	±5.0	99.00
5AV500	5	500	2.50	1.25	70	357	1.50	±5.0	99.00
12AV100	12	100	12.50	1.25	80	130	0.90	±3.0	80.12
12AV150	12	150	8.30	1.25	79	132	0.90	±3.0	80.12
12AV200	12	200	6.25	1.25	78	134	0.90	±3.0	80.12
12AV250	12	250	5.00	1.25	75	139	0.90	±3.0	80.12
12AV300	12	300	4.16	1.25	75	139	1.20	±5.0	99.00
12AV350	12	350	3.57	1.25	75	139	1.20	±5.0	99.00
12AV400	12	400	3.12	1.25	75	139	1.20	±5.0	99.00
12AV450	12	450	2.77	1.25	75	139	1.50	±5.0	99.00
12AV500	12	500	2.50	1.25	75	139	1.50	±5.0	99.00
24AV100	24	100	12.50	1.25	76	69	0.90	±3.0	80.12
24AV150	24	150	8.30	1.25	73	71	0.90	±3.0	80.12
24AV200	24	200	6.25	1.25	73	71	0.90	±3.0	80.12
24AV250	24	250	5.00	1.25	70	74	0.90	±3.0	80.12
24AV300	24	300	4.16	1.25	73	71	1.20	±5.0	99.00
24AV350	24	350	3.57	1.25	73	71	1.20	±5.0	99.00
24AV400	24	400	3.12	1.25	73	71	1.20	±5.0	99.00
24AV450	24	450	2.77	1.25	73	71	1.50	±5.0	99.00
24AV500	24	500	2.50	1.25	73	71	1.50	±5.0	99.00
28AV100	28	100	12.50	1.25	75	60	0.90	±3.0	80.12
28AV150	28	150	8.30	1.25	76	59	0.90	±3.0	80.12
28AV200	28	200	6.25	1.25	75	60	0.90	±3.0	80.12
28AV250	28	250	5.00	1.25	70	64	0.90	±3.0	80.12
28AV300	28	300	4.16	1.25	73	61	1.20	±5.0	99.00
28AV350	28	350	3.57	1.25	73	61	1.20	±5.0	99.00
28AV400	28	400	3.12	1.25	73	61	1.20	±5.0	99.00
28AV450	28	450	2.77	1.25	73	61	1.50	±5.0	99.00
28AV500	28	500	2.50	1.25	73	61	1.50	±5.0	99.00

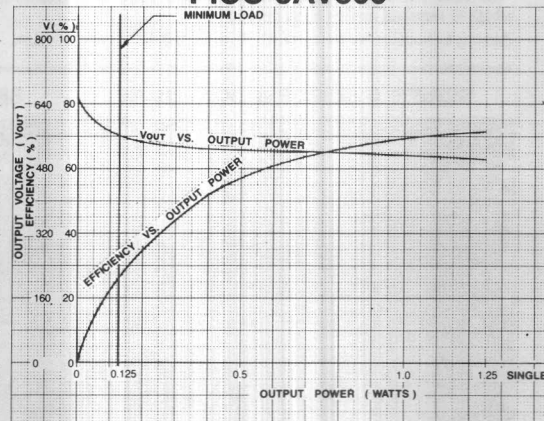
\*Measured using 0.1µf, 1000 volt DC capacitor which is required across the output and maintain at least 10% of load at all times to prevent voltage surge.

Ordering Instructions: No minimum. Net 30 days F.O.B. Mt. Vernon, New York.

### PICO 24AV200



### PICO 5AV500



For immediate engineering assistance or to place an order—Call Toll Free 800-431-1064

## PICO Electronics, Inc.

453 N. MacQuesten Pkwy., Mt. Vernon, N.Y. 10552 • 914-699-5514 • FAX 914-699-5565

# SERIES AV

## Hi Voltage Hi Reliability Ultra-Miniature Isolated DC-DC Converters

**.500 ht. up to 1000 VDC output**



### OPTIONS AVAILABLE

- Expanded operating temp. (-55°C to +85°C)
- Stabilization Bake (125°C ambient)
- Temperature Cycle (-55°C to +125°C)
- Hi Temp, burn in

- 1.25 watt output at 70° ambient
- Ultra-miniature size 0.500" height, 4.0 grams weight, .125 cubic inches volume
- 4 input voltage ranges 5, 12, 24 and 28 VDC
- 100 megohm @ 1500 VDC input/output isolation
- MIL-STD 883 options available
- No heat sink or electrical derating required

This series of unregulated high voltage DC-DC converters are produced in an ultra-miniature encapsulated package. 20 different models are available. These single output isolated units will operate over the temperature range of -25° to +70°C with no heat sink or electrical derating. For military applications an operating temperature range -55°C to +85°C is available. An optional environmental screening package per MIL-STD-883 is also available.

### TYPICAL CHARACTERISTICS:

Test conditions: 25°C ambient and input voltage at nominal value unless otherwise specified.

**LINE REGULATION:** OUTPUT IS DIRECTLY PROPORTIONAL TO THE INPUT

Input voltage range:  $\pm 10\%$  all models

Output voltage tolerance at full load—nominal input—  
See chart for specific model.  
Please keep loaded to minimum of 10% at all times.

Converter frequency: 20 – 40 KHz

Output temperature coefficient:  
0.02%/°C for all models

Operating temperature: -25°C to +70°C ambient.  
No heat sink.

Storage temperature: -55°C to +125°C

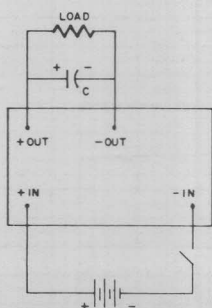
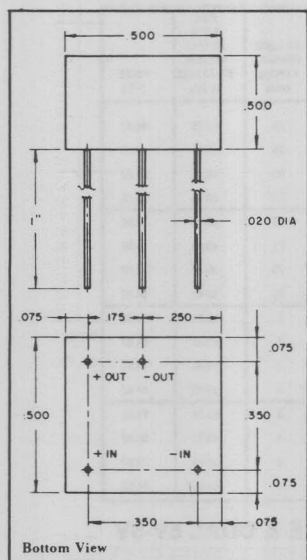
Isolation: 100 megohms min. @ 1500V DC

### SERIES AV - SINGLE OUTPUT

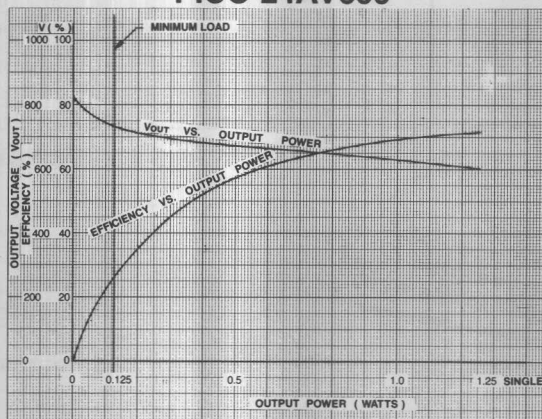
PICO PART NUMBER	INPUT VOLTAGE (V DC)	OUTPUT VOLTAGE (V DC)	MAX. LOAD CURRENT (mA)	MAX. OUTPUT POWER (watts)	EFF. @ FULL LOAD TYPICAL (%)	INPUT CURRENT FULL LOAD TYPICAL (mA)	OUTPUT VOLTAGE RIPPLE @ FULL LOAD (Vp-p max)	FULL LOAD OUTPUT VOLTAGE TOLERANCE (V DC)	PRICE 1-24
5AV600	5	600	2.08	1.25	70	357	3.0	$\pm 10V$	120.00
5AV700	5	700	1.79	1.25	70	357	3.0	$\pm 15V$	120.00
5AV800	5	800	1.56	1.25	70	357	3.0	$\pm 15V$	120.00
5AV900	5	900	1.39	1.25	70	357	3.0	$\pm 20V$	120.00
5AV1000	5	1000	1.25	1.25	70	357	3.0	$\pm 20V$	120.00
12AV600	12	600	2.08	1.25	70	149	3.0	$\pm 10V$	120.00
12AV700	12	700	1.79	1.25	70	149	3.0	$\pm 15V$	120.00
12AV800	12	800	1.56	1.25	70	149	3.0	$\pm 15V$	120.00
12AV900	12	900	1.39	1.25	70	149	3.0	$\pm 20V$	120.00
12AV1000	12	1000	1.25	1.25	70	149	3.0	$\pm 20V$	120.00
24AV600	24	600	2.08	1.25	70	74	3.0	$\pm 10V$	120.00
24AV700	24	700	1.79	1.25	70	74	3.0	$\pm 15V$	120.00
24AV800	24	800	1.56	1.25	70	74	3.0	$\pm 15V$	120.00
24AV900	24	900	1.39	1.25	70	74	3.0	$\pm 20V$	120.00
24AV1000	24	1000	1.25	1.25	70	74	3.0	$\pm 20V$	120.00
28AV600	28	600	2.08	1.25	70	64	3.0	$\pm 10V$	120.00
28AV700	28	700	1.79	1.25	70	64	3.0	$\pm 15V$	120.00
28AV800	28	800	1.56	1.25	70	64	3.0	$\pm 15V$	120.00
28AV900	28	900	1.39	1.25	70	64	3.0	$\pm 20V$	120.00
28AV1000	28	1000	1.25	1.25	70	64	3.0	$\pm 20V$	120.00

\*Measured using 0.01 $\mu$ f, 3000 Volt DC capacitor which is required across the output and maintain at least 10% of load at all times to prevent voltage surge.

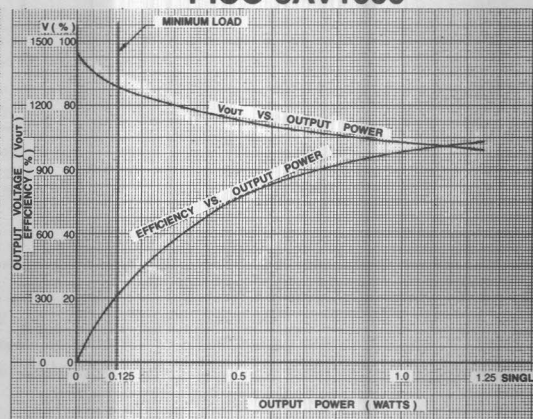
Ordering Instructions: No minimum. Net 30 days F.O.B. Mt. Vernon, New York.



### PICO 24AV600



### PICO 5AV1000



For immediate engineering assistance or to place an order—Call Toll Free 800-431-1064

## PICO Electronics, Inc.

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# SERIES AT/DT

## High Reliability Ultra-Miniature, 0.2" ht. Isolated DC-DC Converters

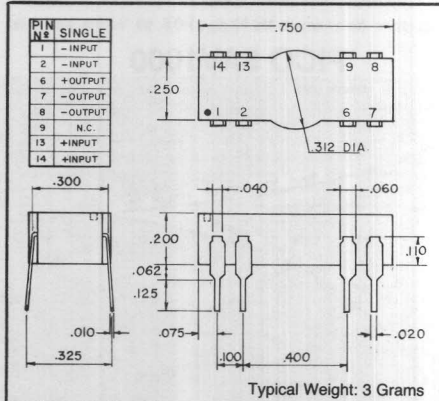
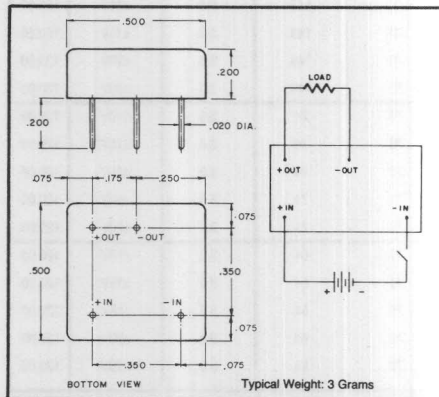
### OPTIONS AVAILABLE

- Expanded operating temp ( $-55^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$ )
- Stabilization Bake ( $125^{\circ}\text{C}$  ambient)
- Temperature Cycle ( $-55^{\circ}\text{C}$  to  $+125^{\circ}\text{C}$ )
- Hi Temp, full power burn in (100% power,  $125^{\circ}\text{C}$  case temp)

### FEATURES

- Ultra-miniature, 0.200" height
- New DIP package available
- Low current consumption
- No external components required
- 4 convenient input voltages, 3-5-9-12V DC
- Up to 0.75 watt output
- Encapsulated semiconductors, conservatively rated for maximum reliability
- Single and dual outputs
- Isolated: 100 megohms at 500V DC
- No heat sink required

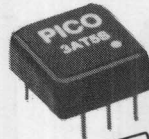
This series of unregulated DC-DC converters offer you a 0.200" tall, package. 64 different models are available and all offer very low current consumption to operate in battery driven circuits. Isolated, single and dual outputs will operate from  $-25^{\circ}\text{C}$  to  $+70^{\circ}\text{C}$  with no heat sink or derating required. Built-in output capacitors and 4 convenient input voltages also help in simplifying your design, and with the addition of our new DIP package, board layout and assembly is simplified.



For immediate engineering assistance or to place an order—  
Call Toll Free 800-431-1064

# PICO Electronics, Inc.

453 North MacQuesten Pkwy., Mt. Vernon, N.Y. 10552  
914-699-5514 • FAX 914-699-5565



No Heat Sink  
or Electrical  
Derating Required

0.2" Height  
Low Profile

No External  
Components  
Required

Low No Load Current  
for Battery Applications

New DIP  
Package



### SERIES AT - SINGLE OUTPUT

PICO PART NUMBER	INPUT VOLTAGE (V DC)	OUTPUT VOLTAGE (V DC)	MAX. LOAD CURRENT (mA)	MAX. OUTPUT POWER (watts)	EFF. @ FULL LOAD TYPICAL (%)	INPUT CURRENT FULL LOAD TYPICAL (mA)	OUTPUT VOLTAGE RIPPLE @ FULL LOAD* (Vp-p max)	NO LOAD CURRENT TYPICAL (mA)	FULL LOAD OUTPUT VOLTAGE TOLERANCE (V DC)	PRICE 1-24
3AT5S	3	5	130	0.65	66	328	0.15	35	$\pm 0.25$	84.82
3AT9S	3	9	83	0.75	70	357	0.15	35	$\pm 0.30$	84.82
3AT12S	3	12	63	0.75	72	347	0.15	35	$\pm 0.40$	84.82
3AT15S	3	15	50	0.75	73	342	0.15	35	$\pm 0.40$	84.82
5AT5S	5	5	150	0.75	69	217	0.15	25	$\pm 0.25$	84.82
5AT9S	5	9	83	0.75	72	208	0.15	25	$\pm 0.30$	84.82
5AT12S	5	12	63	0.75	75	200	0.15	25	$\pm 0.40$	84.82
5AT15S	5	15	50	0.75	76	197	0.15	25	$\pm 0.40$	84.82
9AT5S	9	5	150	0.75	70	119	0.15	8	$\pm 0.25$	84.82
9AT9S	9	9	83	0.75	72	116	0.15	8	$\pm 0.30$	84.82
9AT12S	9	12	63	0.75	78	107	0.15	8	$\pm 0.40$	84.82
9AT15S	9	15	50	0.75	80	104	0.15	8	$\pm 0.40$	84.82
12AT5S	12	5	150	0.75	71	88	0.15	8	$\pm 0.25$	84.82
12AT9S	12	9	83	0.75	73	86	0.15	8	$\pm 0.30$	84.82
12AT12S	12	12	63	0.75	78	80	0.15	8	$\pm 0.40$	84.82
12AT15S	12	15	50	0.75	80	78	0.15	8	$\pm 0.40$	84.82

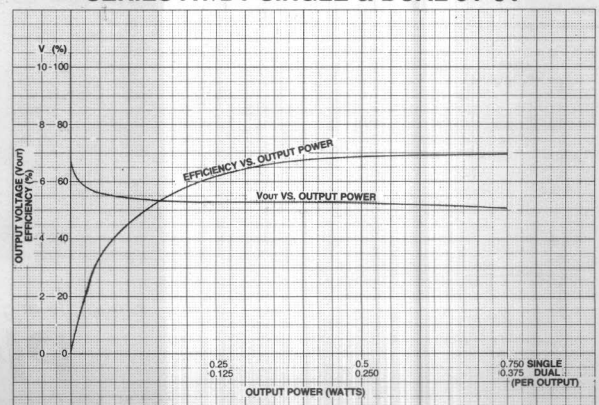
### SERIES DT - SINGLE OUTPUT

PICO PART NUMBER	INPUT VOLTAGE (V DC)	OUTPUT VOLTAGE (V DC)	MAX. LOAD CURRENT (mA)	MAX. OUTPUT POWER (watts)	EFF. @ FULL LOAD TYPICAL (%)	INPUT CURRENT FULL LOAD TYPICAL (mA)	OUTPUT VOLTAGE RIPPLE @ FULL LOAD* (Vp-p max)	NO LOAD CURRENT TYPICAL (mA)	FULL LOAD OUTPUT VOLTAGE TOLERANCE (V DC)	PRICE 1-24
3DT5S	3	5	130	0.65	66	328	0.15	35	$\pm 0.25$	84.82
3DT9S	3	9	83	0.75	70	357	0.15	35	$\pm 0.30$	84.82
3DT12S	3	12	63	0.75	72	347	0.15	35	$\pm 0.40$	84.82
3DT15S	3	15	50	0.75	73	342	0.15	35	$\pm 0.40$	84.82
5DT5S	5	5	150	0.75	69	217	0.15	25	$\pm 0.25$	84.82
5DT9S	5	9	83	0.75	72	208	0.15	25	$\pm 0.30$	84.82
5DT12S	5	12	63	0.75	75	200	0.15	25	$\pm 0.40$	84.82
5DT15S	5	15	50	0.75	76	197	0.15	25	$\pm 0.40$	84.82
9DT5S	9	5	150	0.75	70	119	0.15	8	$\pm 0.25$	84.82
9DT9S	9	9	83	0.75	72	116	0.15	8	$\pm 0.30$	84.82
9DT12S	9	12	63	0.75	78	107	0.15	8	$\pm 0.40$	84.82
9DT15S	9	15	50	0.75	80	104	0.15	8	$\pm 0.40$	84.82
12DT5S	12	5	150	0.75	71	88	0.15	8	$\pm 0.25$	84.82
12DT9S	12	9	83	0.75	73	86	0.15	8	$\pm 0.30$	84.82
12DT12S	12	12	63	0.75	78	80	0.15	8	$\pm 0.40$	84.82
12DT15S	12	15	50	0.75	80	78	0.15	8	$\pm 0.40$	84.82

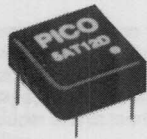
Ordering Instructions:  
No minimum. Net 30 days  
F.O.B. Mt. Vernon, New York.

Delivery—  
stock to one week

### SERIES AT/DT SINGLE & DUAL 5V-5V







**AT Low Profile .5"x.5"x.2" ht.  
... up to 0.75 Watts**

**New DIP  
Package**



**No External  
Components  
Required**

**DT .200" ht. in DIP Package  
... up to 0.75 Watts**

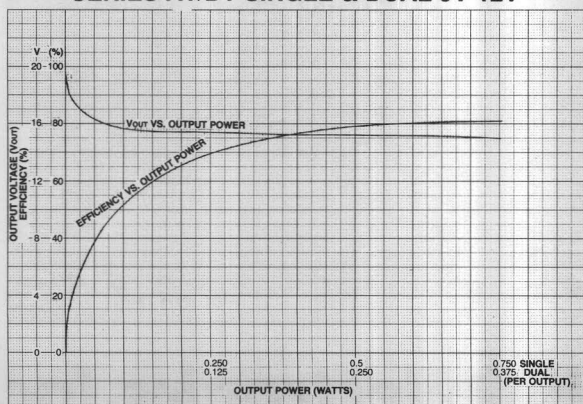
#### SERIES AT - DUAL OUTPUT

PICO PART NUMBER	INPUT VOLTAGE (V DC)	DUAL OUTPUT VOLTAGE (V DC)	MAX. LOAD CURRENT PER OUTPUT (mA)	MAX. OUTPUT POWER PER OUTPUT (watts)	EFF. @ FULL LOAD TYPICAL (%)	INPUT CURRENT FULL LOAD TYPICAL (mA)	OUTPUT VOLTAGE RIPPLE @ FULL LOAD* (Vp-p max)	NO LOAD CURRENT TYPICAL (mA)	FULL LOAD OUTPUT VOLTAGE TOLERANCE (V DC)	PRICE 1-24
3AT50	3	5	65	0.325	66	328	0.15	35	±0.25	95.89
3AT90	3	9	41	0.375	70	357	0.15	35	±0.30	95.89
3AT120	3	12	31	0.375	72	347	0.15	35	±0.40	95.89
3AT150	3	15	25	0.375	73	342	0.15	35	±0.40	95.89
5AT50	5	5	75	0.375	69	217	0.15	35	±0.40	95.89
5AT90	5	9	41	0.375	72	208	0.15	25	±0.30	95.89
5AT120	5	12	31	0.375	75	200	0.15	25	±0.40	95.89
5AT150	5	15	25	0.375	76	197	0.15	25	±0.40	95.89
9AT50	9	5	75	0.375	70	119	0.15	8	±0.25	95.89
9AT90	9	9	41	0.375	72	116	0.15	8	±0.30	95.89
9AT120	9	12	31	0.375	78	107	0.15	8	±0.40	95.89
9AT150	9	15	25	0.375	80	104	0.15	8	±0.40	95.89
12AT50	12	5	75	0.375	71	88	0.15	8	±0.25	95.89
12AT90	12	9	41	0.375	78	86	0.15	8	±0.30	95.89
12AT120	12	12	31	0.375	78	80	0.15	8	±0.40	95.89
12AT150	12	15	25	0.375	80	78	0.15	8	±0.40	95.89

#### SERIES DT-DUAL OUTPUT

PICO PART NUMBER	INPUT VOLTAGE (V DC)	OUTPUT VOLTAGE (V DC)	MAX. LOAD CURRENT (mA)	MAX. OUTPUT POWER (watts)	EFF. @ FULL LOAD TYPICAL (%)	INPUT CURRENT FULL LOAD TYPICAL (mA)	OUTPUT VOLTAGE RIPPLE @ FULL LOAD* (Vp-p max)	NO LOAD CURRENT TYPICAL (mA)	FULL LOAD OUTPUT VOLTAGE TOLERANCE (V DC)	PRICE 1-24
3DT50	3	5	65	0.325	66	328	0.15	35	±0.25	95.89
3DT90	3	9	41	0.375	70	357	0.15	35	±0.30	95.89
3DT120	3	12	31	0.375	72	347	0.15	35	±0.40	95.89
3DT150	3	15	25	0.375	73	342	0.15	35	±0.40	95.89
5DT50	5	5	75	0.375	69	217	0.15	25	±0.25	95.89
5DT90	5	9	41	0.375	72	208	0.15	25	±0.30	95.89
5DT120	5	15	25	0.375	76	197	0.15	25	±0.40	95.89
5DT150	5	15	25	0.375	76	197	0.15	25	±0.40	95.89
9DT50	9	5	75	0.375	70	119	0.15	8	±0.25	95.89
9DT90	9	9	41	0.375	72	116	0.15	8	±0.30	95.89
9DT120	9	12	31	0.375	78	107	0.15	8	±0.40	95.89
9DT150	9	15	25	0.375	80	104	0.15	8	±0.40	95.89
12DT50	12	5	75	0.375	71	88	0.15	8	±0.25	95.89
12DT90	12	9	41	0.375	73	86	0.15	8	±0.30	95.89
12DT120	12	12	31	0.375	78	80	0.15	8	±0.40	95.89
12DT150	12	15	25	0.375	80	78	0.125	8	±0.40	95.89

#### SERIES AT/DT SINGLE & DUAL 9V-12V



Ordering Instructions:  
No minimum. Net 30 days  
F.O.B. Mt. Vernon, New York.

**Delivery—  
stock to one week**

#### TYPICAL CHARACTERISTICS:

Test conditions: 25°C ambient and input voltage at nominal value unless otherwise specified.

LINE REGULATION: OUTPUT VOLTAGE IS DIRECTLY PROPORTIONAL TO THE INPUT VOLTAGE.

Input voltage range: 3V models 2.5 to 3.5V DC  
5V models 4 to 6V DC  
9V models 7 to 11V DC  
12V models 9 to 14V DC

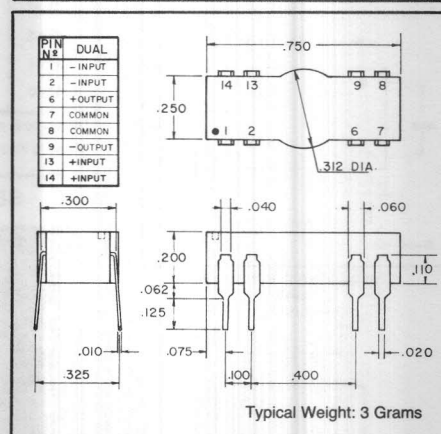
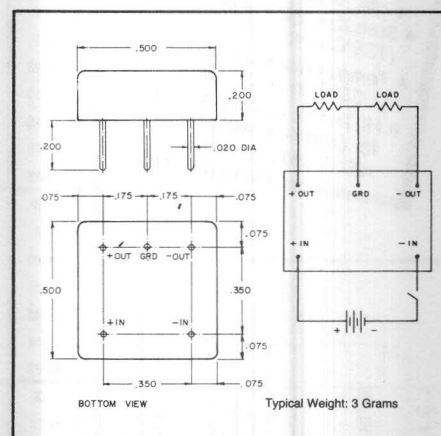
Converter frequency: 40 to 70 KHz

Output temperature coefficient:  
0.05% per °C all models

Operating temperature: -25°C to +70°C ambient.  
No heat sink or derating required.

Storage temperature: -55°C to +125°C

Isolation: 100 megohms min. @ 500V DC



For immediate engineering assistance or to place an order—  
Call Toll Free 800-431-1064

**PICO  
Electronics, Inc.**

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# SERIES B

## Hi Reliability

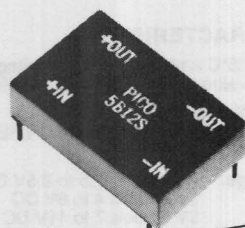
## Ultra-Miniature

## Isolated

## DC-DC

## Converters

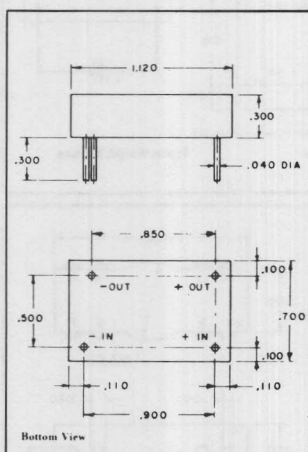
## Up to 2.5 Watts



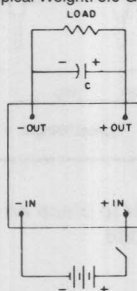
**No Heat Sink  
or Electrical  
Derating Required**

**OPTIONS AVAILABLE**

- Expanded operating temp. (-55°C to +85°C)
- Stabilization Bake (125°C ambient)
- Temperature Cycle (-55°C to +125°C)
- Hi Temp, full power burn in (100% power, 125°C case temp)



Bottom View



**Delivery—  
stock to one week**

### FEATURES

- Up to 2.5 watt output at 70°C ambient
- Encapsulated semiconductors, conservatively rated for maximum reliability
- Ultra-miniature size (0.3" Height)
- 5 input voltage ranges 5, 12, 24, 28 and 48V DC
- 100 megohm @ 500V DC isolation
- Single and dual isolated output
- No heat sink required

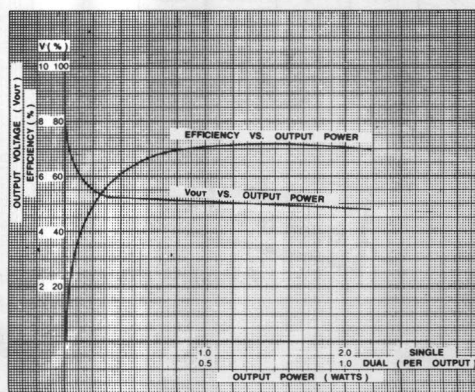
This series of unregulated DC-DC converters comes in a miniaturized encapsulated package. 68 different models are available. The units feature single and isolated dual outputs. They will operate over the temperature range of -25°C to +70°C. No heat sink is required.

### SERIES B - SINGLE OUTPUT

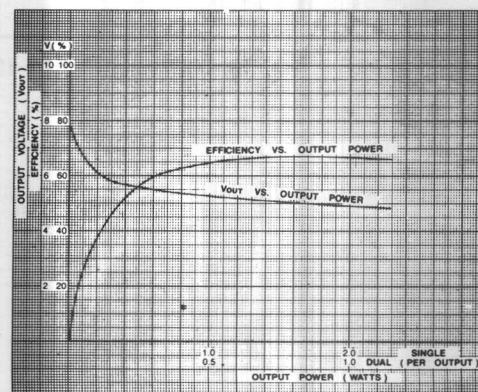
PICO PART NUMBER	INPUT VOLTAGE (V DC)	OUTPUT VOLTAGE (V DC)	MAX. LOAD CURRENT (mA)	MAX. OUTPUT POWER (watts)	EFF. @ FULL LOAD TYPICAL (%)	INPUT CURRENT FULL LOAD TYPICAL (mA)	OUTPUT VOLTAGE RIPPLE @ FULL LOAD* (Vp-p max)	NO LOAD CURRENT TYPICAL (mA)	FULL LOAD OUTPUT VOLTAGE TOLERANCE (V DC)	PRICE 1-24
5B5S	5	5	300	1.5	67	447	0.15	90	±0.25	48.19
5B9S	5	9	167	1.5	73	411	0.15	90	±0.3	48.19
5B12S	5	12	125	1.5	75	400	0.15	90	±0.4	48.19
5B15S	5	15	100	1.5	75	400	0.15	90	±0.4	48.19
5B24S	5	24	63	1.5	78	385	0.15	90	±0.5	48.19
5B28S	5	28	54	1.5	78	385	0.15	90	±0.5	48.19
5B48S	5	48	31	1.5	79	380	0.15	90	±0.7	48.19
12B5S	12	5	300	1.5	69	182	0.15	40	±0.25	48.19
12B9S	12	9	222	2.0	76	219	0.15	40	±0.3	48.19
12B12S	12	12	167	2.0	78	214	0.15	40	±0.4	48.19
12B15S	12	15	133	2.0	78	214	0.15	40	±0.4	48.19
12B24S	12	24	83	2.0	80	208	0.15	40	±0.5	48.19
12B28S	12	28	71	2.0	80	208	0.15	40	±0.5	48.19
12B48S	12	48	42	2.0	80	208	0.15	40	±0.7	48.19
24B5S	24	5	300	1.5	69	91	0.15	10	±0.25	48.19
24B9S	24	9	222	2.0	76	110	0.15	15	±0.3	48.19
24B12S	24	12	167	2.0	78	107	0.15	15	±0.4	48.19
24B15S	24	15	133	2.0	78	107	0.15	15	±0.4	48.19
24B24S	24	24	104	2.5	82	127	0.15	15	±0.5	48.19
24B28S	24	28	89	2.5	81	129	0.15	15	±0.5	48.19
24B48S	24	48	52	2.5	82	127	0.15	15	±0.7	48.19
28B5S	28	5	300	1.5	67	80	0.15	15	±0.25	48.19
28B9S	28	9	222	2.0	75	95	0.15	15	±0.3	48.19
28B12S	28	12	167	2.0	77	93	0.15	15	±0.4	48.19
28B15S	28	15	133	2.0	77	93	0.15	15	±0.4	48.19
28B24S	28	24	104	2.5	81	110	0.15	15	±0.5	48.19
28B28S	28	28	89	2.5	81	110	0.15	15	±0.5	48.19
28B48S	28	48	52	2.5	82	109	0.15	15	±0.7	48.19
48B5S	48	5	300	1.5	71	44	0.20	3	±0.25	51.70
48B9S	48	9	222	2.0	76	55	0.20	3	±0.3	51.70
48B12S	48	12	167	2.0	82	51	0.20	3	±0.4	51.70
48B15S	48	15	133	2.0	82	51	0.20	3	±0.4	51.70
48B24S	48	24	104	2.5	84	62	0.20	3	±0.5	51.70
48B28S	48	28	89	2.5	83	63	0.20	3	±0.5	51.70

\*The ripple is measured with a 22μF, 75 volt high quality tantalum capacitor which is required across the output.  
Ordering Instruction: No minimum. Net 30 days F.O.B. Mt. Vernon, New York.

### SERIES B SINGLE & DUAL 48V-5V



### SERIES B SINGLE & DUAL 5V-5V





# TYPICAL

**CHARACTERISTICS:** Test conditions: 25°C ambient and input voltage at nominal value unless otherwise specified.

**LINE REGULATION:** OUTPUT IS DIRECTLY PROPORTIONAL TO THE INPUT.

**Input voltage range:** 5V models 4 to 6.5V DC  
12V models 9 to 15V DC  
24V models 17 to 28V DC  
28V models 21 to 32V DC  
48V models 25 to 50V DC

**Output voltage tolerance at full load:**

5V models  $\pm 0.25V$   
9V models  $\pm 0.3V$   
12V & 15V models  $\pm 0.4V$   
24V & 28V models  $\pm 0.5V$   
48V models  $\pm 0.7V$

**Converter frequency:** 20 to 40 KHz

**Output temperature coefficient:** 0.02%/°C

**Operating temperature:** -25°C to +70°C ambient.  
No heat sink is required.

**Storage temperature:** -55°C to +125°C

**Isolation:** 100 megohms min. @ 500V DC

**Short circuit protection:** Temporary

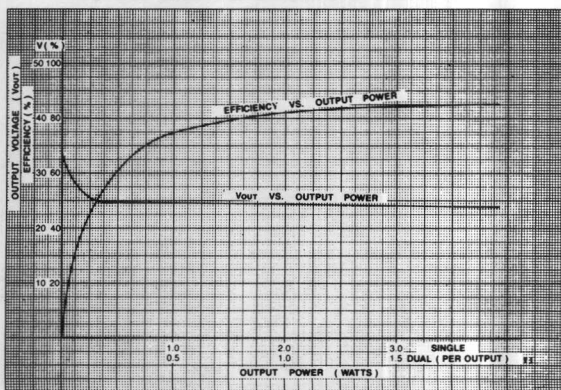
## SERIES B - DUAL OUTPUT

PICO PART NUMBER	INPUT VOLTAGE (V DC)	DUAL OUTPUT VOLTAGE (V DC)	MAX. LOAD CURRENT PER OUTPUT (mA)	MAX. OUTPUT POWER PER OUTPUT (watts)	EFF. @ FULL LOAD TYPICAL (%)	INPUT CURRENT FULL LOAD TYPICAL (mA)	OUTPUT VOLTAGE RIPPLE @ FULL LOAD* (Vp-p max)	NO LOAD CURRENT TYPICAL (mA)	FULL LOAD OUTPUT VOLTAGE TOLERANCE (V DC)	PRICE 1-24
5B5D	5	5	150	0.75	68	441	0.15	90	$\pm 0.25$	54.46
5B9D	5	9	83	0.75	73	411	0.15	90	$\pm 0.3$	54.46
5B12D	5	12	62	0.75	76	394	0.15	90	$\pm 0.4$	54.46
5B15D	5	15	50	0.75	78	384	0.15	90	$\pm 0.4$	54.46
5B24D	5	24	31	0.75	80	375	0.15	90	$\pm 0.5$	54.46
5B28D	5	28	27	0.75	78	385	0.15	90	$\pm 0.5$	54.46
5B48D	5	48	15	0.75	79	380	0.15	90	$\pm 0.7$	54.46
12B5D	12	5	150	0.75	71	176	0.15	40	$\pm 0.25$	54.46
12B9D	12	9	111	1.0	76	219	0.15	40	$\pm 0.3$	54.46
12B12D	12	12	83	1.0	81	205	0.15	40	$\pm 0.4$	54.46
12B15D	12	15	66	1.0	81	205	0.15	40	$\pm 0.4$	54.46
12B24D	12	24	41	1.0	83	200	0.15	40	$\pm 0.5$	54.46
12B28D	12	28	35	1.0	80	208	0.15	40	$\pm 0.5$	54.46
12B48D	12	48	21	1.0	80	208	0.15	40	$\pm 0.7$	54.46
24B5D	24	5	150	0.75	71	88	0.15	10	$\pm 0.25$	54.46
24B9D	24	9	111	1.0	76	110	0.15	15	$\pm 0.3$	54.46
24B12D	24	12	83	1.0	80	104	0.15	15	$\pm 0.4$	54.46
24B15D	24	15	66	1.0	81	102	0.15	15	$\pm 0.4$	54.46
24B24D	24	24	52	1.25	82	127	0.15	15	$\pm 0.5$	54.46
24B28D	24	28	45	1.25	81	129	0.15	15	$\pm 0.5$	54.46
24B48D	24	48	26	1.25	82	127	0.15	15	$\pm 0.7$	54.46
28B5D	28	5	150	0.75	67	80	0.15	15	$\pm 0.25$	54.46
28B9D	28	9	111	1.0	75	95	0.15	15	$\pm 0.3$	54.46
28B12D	28	12	83	1.0	77	93	0.15	15	$\pm 0.4$	54.46
28B15D	28	15	66	1.0	77	93	0.15	15	$\pm 0.4$	54.46
28B24D	28	24	52	1.25	81	110	0.15	15	$\pm 0.5$	54.46
28B28D	28	28	45	1.25	81	110	0.15	15	$\pm 0.5$	54.46
28B48D	28	48	26	1.25	82	109	0.15	15	$\pm 0.7$	54.46
48B5D	48	5	150	0.75	71	44	0.20	3	$\pm 0.25$	58.45
48B9D	48	9	111	1.0	76	55	0.20	3	$\pm 0.3$	58.45
48B12D	48	12	83	1.0	82	51	0.20	3	$\pm 0.4$	58.45
48B15D	48	15	67	1.0	82	51	0.20	3	$\pm 0.4$	58.45
48B24D	48	24	52	1.25	84	62	0.20	3	$\pm 0.5$	58.45
48B28D	48	28	45	1.25	83	63	0.20	3	$\pm 0.7$	58.45

\*The ripple is measured with a 22 $\mu$ F, 75 volt high quality tantalum capacitor which is required across each output.

Ordering Instructions: No minimum. Net 30 days F.O.B. Mt. Vernon, New York.

## SERIES B SINGLE & DUAL 24V-24V



**PICO Electronics, Inc.**

453 N. MacQuesten Pkwy.  
Mt. Vernon, N.Y. 10552

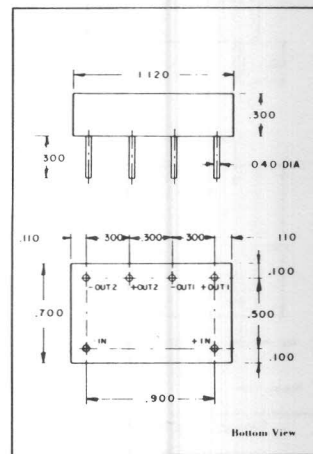
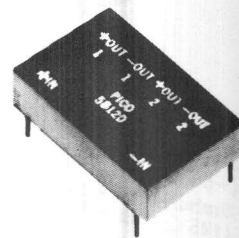
914-699-5514

FAX 914-699-5565

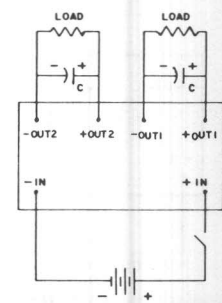
For immediate engineering assistance or to place an order—Call Toll Free 800-431-1064

Delivery—  
stock to one week

**Low Profile  
0.3" Height!  
Up to 2.5 Watts**

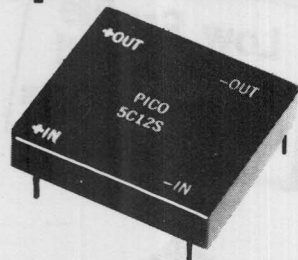


Typical Weight: 8.5 Grams

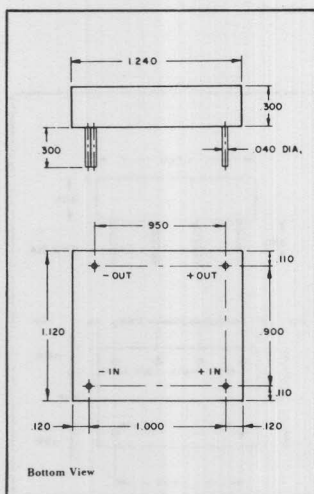




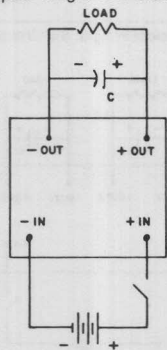
# SERIES C Hi Reliability Miniature Isolated DC-DC Converters Up to 4 Watts



- OPTIONS AVAILABLE**
- Expanded operating temp. (-55°C to +85°C)
  - Stabilization Bake (125°C ambient)
  - Temperature Cycle (-55°C to +125°C)
  - Hi Temp, full power burn in (100% power, 125°C case temp)



Typical Weight: 14.5 Grams



**Delivery—  
stock to one week**

## FEATURES

- Up to 4 watts output at 70°C ambient
- Encapsulated semiconductors, conservatively rated for maximum reliability
- Miniature-size (0.3" Height)
- 5 input voltage ranges 5, 12, 24, 28 and 48V DC
- 100 megohm @ 500V DC
- Single and dual isolated outputs
- No heat sink required

This series of unregulated DC-DC converters are produced in an miniaturized encapsulated package. 68 different models are available. The units feature single and isolated dual outputs. They will operate over the temperature range of -25°C to +70°C. No heat sink is required.

## SERIES C - SINGLE OUTPUT

PICO PART NUMBER	INPUT VOLTAGE (V DC)	OUTPUT VOLTAGE (V DC)	MAX. LOAD CURRENT (mA)	MAX. OUTPUT POWER (watts)	EFF. @ FULL LOAD TYPICAL (%)	INPUT CURRENT FULL LOAD TYPICAL (mA)	OUTPUT VOLTAGE RIPPLE @ FULL LOAD* (Vp-p max)	NO LOAD CURRENT TYPICAL (mA)	FULL LOAD OUTPUT VOLTAGE TOLERANCE (V DC)	PRICE 1-24
5C5S	5	5	500	2.5	68	735	0.20	90	±0.25	54.46
5C9S	5	9	333	3.0	72	833	0.20	100	±0.3	54.46
5C12S	5	12	250	3.0	75	800	0.20	100	±0.4	54.46
5C15S	5	15	200	3.0	77	779	0.15	100	±0.4	54.46
5C24S	5	24	125	3.0	76	789	0.15	120	±0.5	54.46
5C28S	5	28	107	3.0	76	789	0.15	120	±0.5	54.46
5C48S	5	48	63	3.0	76	789	0.15	120	±0.7	54.46
12C5S	12	5	500	2.5	67	311	0.20	45	±0.25	54.46
12C9S	12	9	333	3.0	75	333	0.20	45	±0.3	54.46
12C12S	12	12	290	3.5	77	379	0.20	40	±0.4	54.46
12C15S	12	15	266	4.0	84	396	0.15	40	±0.4	54.46
12C24S	12	24	166	4.0	81	411	0.15	45	±0.5	54.46
12C28S	12	28	143	4.0	82	407	0.15	45	±0.5	54.46
12C48S	12	48	83	4.0	81	412	0.15	45	±0.7	54.46
24C5S	24	5	500	2.5	67	155	0.20	25	±0.25	54.46
24C9S	24	9	333	3.0	73	171	0.20	25	±0.3	54.46
24C12S	24	12	290	3.5	75	194	0.20	25	±0.4	54.46
24C15S	24	15	235	3.5	79	184	0.20	25	±0.4	54.46
24C24S	24	24	166	4.0	83	200	0.20	25	±0.5	54.46
24C28S	24	28	143	4.0	83	201	0.20	25	±0.5	54.46
24C48S	24	48	83	4.0	83	201	0.20	25	±0.7	54.46
28C5S	28	5	500	2.5	67	133	0.20	25	±0.25	54.46
28C9S	28	9	333	3.0	73	147	0.20	25	±0.3	54.46
28C12S	28	12	290	3.5	75	167	0.20	25	±0.4	54.46
28C15S	28	15	235	3.5	78	160	0.20	25	±0.4	54.46
28C24S	28	24	166	4.0	82	174	0.20	25	±0.5	54.46
28C28S	28	28	143	4.0	83	172	0.20	25	±0.5	54.46
28C48S	28	48	83	4.0	83	172	0.20	25	±0.7	54.46
48C5S	48	5	500	2.5	75	69	0.25	3	±0.25	58.45
48C9S	48	9	333	3.0	76	82	0.25	3	±0.3	58.45
48C12S	48	12	290	3.5	81	90	0.25	3	±0.4	58.45
48C15S	48	15	235	3.5	81	90	0.25	3	±0.4	58.45
48C24S	48	24	166	4.0	85	98	0.25	3	±0.5	58.45
48C28S	48	28	143	4.0	83	100	0.25	3	±0.5	58.45

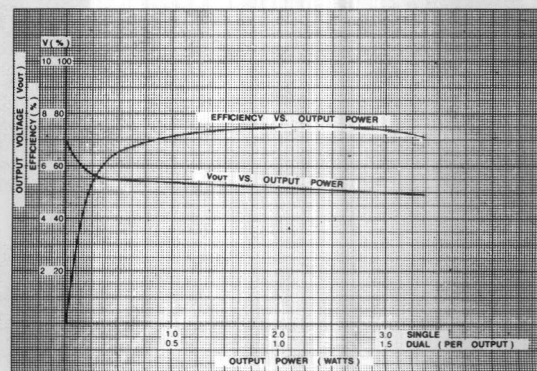
\*The ripple is measured with a 22μF, 75 volt high quality tantalum capacitor which is required across the output.  
Ordering Instructions: No minimum. Net 30 days F.O.B. Mt. Vernon, New York.

**PICO  
Electronics, Inc.**

453 N. MacQuesten Pkwy.  
Mt. Vernon, N.Y. 10552

914-699-5514  
FAX 914-699-5565

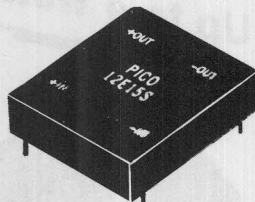
## SERIES C SINGLE & DUAL 48V-5V





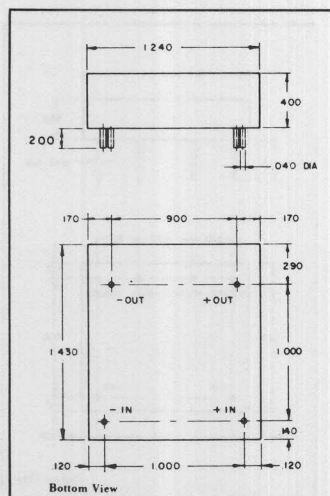


# SERIES E Hi Reliability Miniature Isolated DC-DC Converters Up to 7 Watts

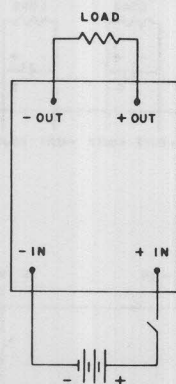


**OPTIONS AVAILABLE**

- Expanded operating temp. (-55°C to +85°C)
- Stabilization Bake (125°C ambient)
- Temperature Cycle (-55°C to +125°C)
- Hi Temp, full power burn in (100% power, 125°C case temp)



Typical Weight: 25 Grams



**Delivery—  
stock to one week**

## FEATURES

- Up to 7 watt output at 70°C ambient
- Encapsulated semiconductors, conservatively rated for maximum reliability
- 5 input voltage ranges 5, 12, 24, 28 and 48V DC
- 100 megohm @ 500V DC isolation
- Single and dual isolated outputs
- No heat sink required
- Output filter included (No external capacitors required)

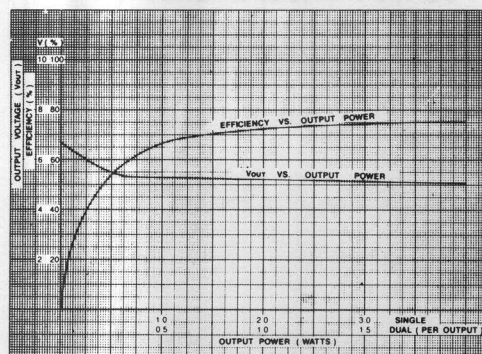
This series of unregulated DC-DC converters are produced in an ultra-miniature encapsulated package. 68 different models are available. The units feature single and isolated dual outputs. They will operate over the temperature range of -25°C to +70°C. No heat sink is required.

## SERIES E - SINGLE OUTPUT

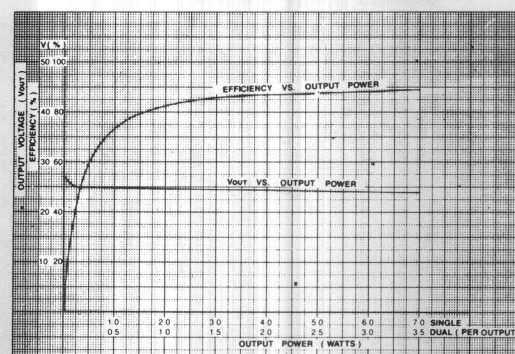
PICO PART NUMBER	INPUT VOLTAGE (V DC)	OUTPUT VOLTAGE (V DC)	MAX. LOAD CURRENT (mA)	MAX. OUTPUT POWER (watts)	EFF. @ FULL LOAD TYPICAL (%)	INPUT CURRENT FULL LOAD TYPICAL (mA)	OUTPUT VOLTAGE RIPPLE @ FULL LOAD (Vp-p max)	NO LOAD CURRENT TYPICAL (mA)	FULL LOAD OUTPUT VOLTAGE TOLERANCE (V DC)	PRICE 1-24
5E5S	5	5	800	4	68	1176	0.3	140	±0.25	89.62
5E9S	5	9	500	4.5	73	1233	0.3	200	±0.3	89.62
5E12S	5	12	375	4.5	75	1200	0.25	200	±0.4	89.62
5E15S	5	15	300	4.5	78	1154	0.25	190	±0.4	89.62
5E24S	5	24	187	4.5	80	1125	0.25	190	±0.5	89.62
5E28S	5	28	161	4.5	79	1139	0.25	190	±0.5	89.62
5E48S	5	48	93	4.5	80	1125	0.25	190	±0.7	89.62
12E5S	12	5	800	4.0	73	456	0.3	40	±0.25	89.62
12E9S	12	9	666	6.0	80	625	0.3	45	±0.3	89.62
12E12S	12	12	541	6.5	82	660	0.25	45	±0.4	89.62
12E15S	12	15	433	6.5	83	652	0.25	40	±0.4	89.62
12E24S	12	24	281	6.75	86	654	0.25	40	±0.5	89.62
12E28S	12	28	241	6.75	86	654	0.25	40	±0.5	89.62
12E48S	12	48	141	6.75	86	654	0.25	40	±0.7	89.62
24E5S	24	5	800	4.0	69	241	0.3	22	±0.25	89.62
24E9S	24	9	666	6.0	79	316	0.3	22	±0.3	89.62
24E12S	24	12	541	6.5	81	334	0.25	22	±0.4	89.62
24E15S	24	15	433	6.5	82	330	0.25	22	±0.4	89.62
24E24S	24	24	291	7.0	88	331	0.25	17	±0.5	89.62
24E28S	24	28	250	7.0	88	331	0.25	17	±0.5	89.62
24E48S	24	48	146	7.0	88	331	0.25	17	±0.7	89.62
28E5S	28	5	800	4.0	69	207	0.3	22	±0.25	89.62
28E9S	28	9	666	6.0	80	268	0.3	22	±0.3	89.62
28E12S	28	12	540	6.5	80	290	0.25	22	±0.4	89.62
28E15S	28	15	433	6.5	82	283	0.25	22	±0.4	89.62
28E24S	28	24	291	7.0	88	284	0.25	22	±0.5	89.62
28E28S	28	28	250	7.0	88	284	0.25	20	±0.5	89.62
28E48S	28	48	146	7.0	88	284	0.25	20	±0.7	89.62
48E5S	48	5	800	4.0	75	111	0.3	6	±0.25	96.45
48E9S	48	9	666	6.0	80	156	0.3	6	±0.3	96.45
48E12S	48	12	541	6.5	84	161	0.3	6	±0.4	96.45
48E15S	48	15	433	6.5	84	161	0.3	6	±0.4	96.45
48E24S	48	24	291	7.0	89	164	0.3	6	±0.5	96.45
48E28S	48	28	250	7.0	89	164	0.3	6	±0.5	96.45

Ordering Instructions: No minimum. Net 30 days F.O.B. Mt. Vernon, New York.

## SERIES E SINGLE & DUAL 48V-5V



## SERIES E SINGLE & DUAL 48V-24V





# TYPICAL

**CHARACTERISTICS:** Test conditions: 25°C ambient and input voltage at nominal value unless otherwise specified.

**LINE REGULATION:** OUTPUT IS DIRECTLY PROPORTIONAL TO THE INPUT.

**Input voltage range:** 5V models 4 to 6.5V DC  
12V models 9 to 15V DC  
24V models 17 to 28V DC  
28V models 21 to 32V DC  
48V models 25 to 50V DC

**Output voltage tolerance at full load:**

5V models  $\pm 0.25V$   
9V models  $\pm 0.3V$   
12V & 15V models  $\pm 0.4V$   
24V & 28V models  $\pm 0.5V$   
48V models  $\pm 0.7V$

**Converter frequency:** 20 to 40 KHz

**Output temperature coefficient:** 0.02%/°C

**Operating temperature:** -25°C to +70°C ambient.  
No heat sink is required.

**Storage temperature:** -55°C to +125°C

**Isolation:** 100 megohms min. @ 500V DC

**Short circuit protection:** Temporary

## SERIES E - DUAL OUTPUT

PICO PART NUMBER	INPUT VOLTAGE (V DC)	DUAL OUTPUT VOLTAGE (V DC)	MAX. LOAD CURRENT PER OUTPUT (mA)	MAX. OUTPUT POWER PER OUTPUT (watts)	EFF. @ FULL LOAD TYPICAL (%)	INPUT CURRENT FULL LOAD TYPICAL (mA)	OUTPUT VOLTAGE RIPPLE @ FULL LOAD (Vp-p max)	NO LOAD CURRENT TYPICAL (mA)	FULL LOAD OUTPUT VOLTAGE TOLERANCE (V DC)	PRICE 1-24
5E5D	5	5	400	2.0	68	1176	0.3	200	$\pm 0.25$	97.91
5E9D	5	9	250	2.25	74	1216	0.3	200	$\pm 0.3$	97.91
5E12D	5	12	187	2.25	77	1168	0.25	220	$\pm 0.4$	97.91
5E15D	5	15	150	2.25	79	1139	0.25	200	$\pm 0.4$	97.91
5E24D	5	24	93	2.25	80	1125	0.25	200	$\pm 0.5$	97.91
5E28D	5	28	80	2.25	80	1139	0.25	200	$\pm 0.5$	97.91
5E48D	5	48	46	2.25	80	1125	0.25	200	$\pm 0.7$	97.91
12E5D	12	5	400	2.0	75	444	0.3	40	$\pm 0.25$	97.91
12E9D	12	9	333	3.0	80	625	0.3	40	$\pm 0.3$	97.91
12E12D	12	12	270	3.25	83	652	0.25	40	$\pm 0.4$	97.91
12E15D	12	15	217	3.25	85	637	0.25	40	$\pm 0.4$	97.91
12E24D	12	24	140	3.375	86	654	0.25	40	$\pm 0.5$	97.91
12E28D	12	28	121	3.375	86	654	0.25	40	$\pm 0.5$	97.91
12E48D	12	48	70	3.5	88	654	0.25	40	$\pm 0.7$	97.91
24E5D	24	5	400	2.0	72	231	0.3	22	$\pm 0.25$	97.91
24E9D	24	9	333	3.0	79	316	0.3	22	$\pm 0.3$	97.91
24E12D	24	12	270	3.25	82	330	0.25	22	$\pm 0.4$	97.91
24E15D	24	15	217	3.25	85	318	0.25	22	$\pm 0.4$	97.91
24E24D	24	24	145	3.5	88	331	0.25	18	$\pm 0.5$	97.91
24E28D	24	28	125	3.5	88	331	0.25	18	$\pm 0.5$	97.91
24E48D	24	48	73	3.5	88	331	0.25	18	$\pm 0.7$	97.91
28E5D	28	5	400	2.0	69	207	0.3	25	$\pm 0.25$	97.91
28E9D	28	9	333	3.0	80	268	0.3	25	$\pm 0.3$	97.91
28E12D	28	12	270	3.25	80	290	0.25	22	$\pm 0.4$	97.91
28E15D	28	15	217	3.25	82	283	0.25	22	$\pm 0.4$	97.91
28E24D	28	24	145	3.5	88	284	0.25	20	$\pm 0.5$	97.91
28E28D	28	28	125	3.5	88	284	0.25	20	$\pm 0.5$	97.91
28E48D	28	48	73	3.5	88	284	0.25	20	$\pm 0.7$	97.91
48E5D	48	5	400	2.0	74	113	0.3	6	$\pm 0.25$	104.72
48E9D	48	9	333	3.0	80	156	0.3	6	$\pm 0.3$	104.72
48E12D	48	12	270	3.25	85	160	0.3	6	$\pm 0.4$	104.72
48E15D	48	15	217	3.25	85	160	0.3	6	$\pm 0.4$	104.72
48E24D	48	24	145	3.5	88	166	0.3	6	$\pm 0.5$	104.72
48E28D	48	28	125	3.5	89	164	0.3	6	$\pm 0.5$	104.72

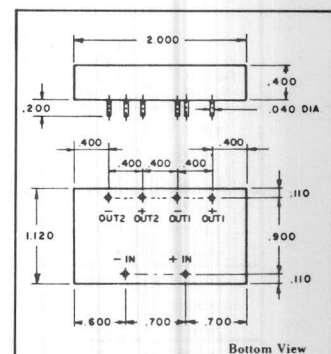
Ordering Instructions: No minimum. Net 30 days F.O.B. Mt. Vernon, New York.

**Low Profile  
0.4" Height!  
Up to 7 Watts**

**NO EXTERNAL  
CAPACITORS  
REQUIRED**

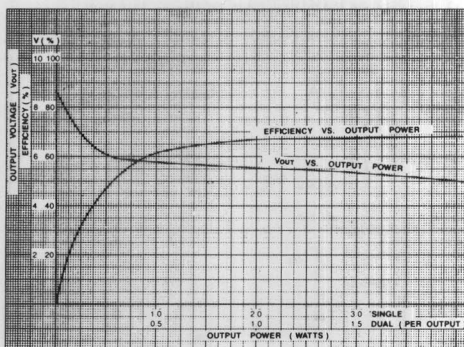


**No Heat Sink  
or Electrical  
Derating Required**

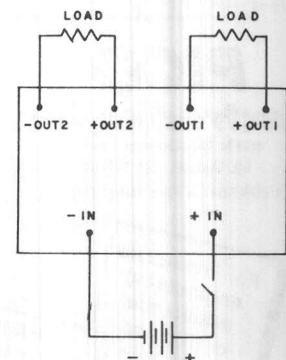
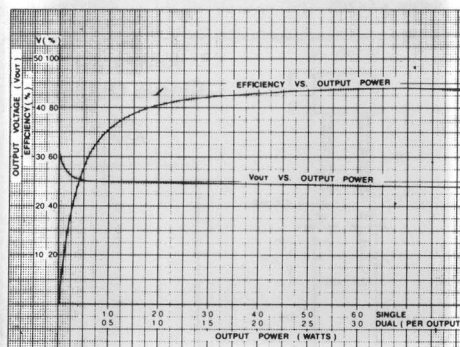


Typical Weight: 33 Grams

### SERIES E SINGLE & DUAL 5V-5V



### SERIES E SINGLE & DUAL 24V-24V



**PICO Electronics, Inc.**

453 N. MacQuesten Pkwy., Mt. Vernon, N.Y. 10552 • 914-699-5514 • FAX 914-699-5565

# SERIES FR Hi Reliability Isolated Regulated DC-DC Converters

## TYPICAL CHARACTERISTICS FOR ALL MODELS:

Test conditions: 25°C ambient

Output voltage tolerance:  $\pm 1\%$  on all single/ $\pm 2\%$  dual

Line regulations:  $\pm 0.1\%$  single/ $\pm 0.2\%$  dual  
(for the input voltage range of  $\pm 10\%$ )

Load regulation: 0.2% single/0.4% dual

Converter frequency: 20-40K Hz.

Operating temperature: -25°C to +70°C ambient

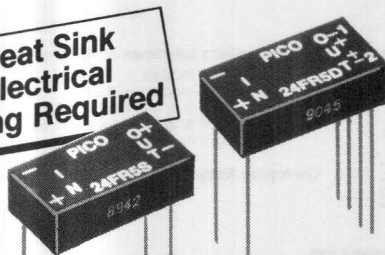
Output voltage temperature coefficient: 0.01%/°C

Storage temperature: -55°C to +125°C

Isolation: 100 megohms minimum at 500 volts DC

Short circuit protection: Temporary

No Heat Sink  
or Electrical  
Derating Required



### OPTIONS AVAILABLE

- Expanded operating temp. (-55°C to +85°C)
- Stabilization Bake (125°C ambient)
- Temperature Cycle (-55°C to +125°C)
- Hi Temp, full power burn in (100% power, 125°C case temp)

### FEATURES:

- Excellent voltage regulations  $\pm 0.1\%$  single/ $\pm 0.2\%$  dual
- Encapsulated semiconductors, conservatively rated for maximum reliability.
- Excellent load regulations 0.2% single/0.4% dual
- Up to 1.0 watts output power at 70°C ambient
- Low output ripple
- 100 megohm 500V DC isolation
- Single and dual isolated outputs
- Low profile, ultra-miniature size
- No output capacitor required • No heat sink required

**Low Profile**  
**.5" x 1" x .3" ht.**  
**up to 1 Watt**

This series of encapsulated converters come in 24 different models. The highly regulated output is isolated from the input. The units will operate over the temperature range of -25°C to +70°C. No heat sink is required. These units are excellent for applications where the input voltage varies  $\pm 10\%$  and the output must be held to  $\pm 0.1\%$  single and  $\pm 0.2\%$  dual. The output voltage is maintained to within 0.2% from no load to full load for single and 0.4% for dual.

## SERIES FR - SINGLE OUTPUT

PICO PART NUMBER	* INPUT VOLTAGE (V dc)	OUTPUT VOLTAGE (V dc)	MAX. LOAD CURRENT (mA)	MAX. OUTPUT POWER (watts)	EFF. @ FULL LOAD AT NOMINAL INPUT VOLTAGE TYPICAL (%)	INPUT CURRENT @ FULL LOAD TYPICAL (mA) AT NOMINAL INPUT VOLTAGE	OUTPUT VOLTAGE RIPPLE @ FULL LOAD (mVp-p) max.	INPUT CURRENT @ NO LOAD TYPICAL AT NOMINAL INPUT VOLTAGE (mA)	EFF. @ FULL LOAD TYPICAL (%)		PRICE 1-24
									HIGH LINE	LOW LINE	
5FR5S	5	5	150	0.75	37	405	75	88	34	42	72.09
5FR12S	5	12	83	1.00	50	400	50	88	45	56	72.09
5FR15S	5	15	67	1.00	51	392	50	86	45	57	72.09
12FR5S	12	5	150	0.75	42	149	75	27	38	48	72.09
12FR12S	12	12	83	1.00	53	157	50	32	47	60	72.09
12FR15S	12	15	67	1.00	55	152	50	34	49	62	72.09
24FR5S	24	5	150	0.75	41	76	75	16	37	47	72.09
24FR12S	24	12	83	1.00	51	82	50	19	45	58	72.09
24FR15S	24	15	67	1.00	54	77	50	19	47	61	72.09
28FR5S	28	5	150	0.75	35	76	75	16	32	40	72.09
28FR12S	28	12	83	1.00	44	82	50	19	40	50	72.09
28FR15S	28	15	67	1.00	46	77	50	19	41	52	72.09

## SERIES FR - DUAL OUTPUT

PICO PART NUMBER	* INPUT VOLTAGE (V dc)	DUAL OUTPUT VOLTAGE ISOLATED (V dc)	MAX. LOAD CURRENT PER OUTPUT (mA)	MAX. OUTPUT POWER PER OUTPUT (watts)	EFF. @ FULL LOAD AT NOMINAL INPUT VOLTAGE TYPICAL (%)	INPUT CURRENT FULL LOAD TYPICAL AT NOMINAL INPUT VOLTAGE (mA)	OUTPUT VOLTAGE RIPPLE @ FULL LOAD PER OUTPUT (mVp-p max.)	INPUT CURRENT @ NO LOAD TYPICAL AT NOMINAL INPUT VOLTAGE (mA)	EFF. @ FULL LOAD TYPICAL (%)		PRICE 1-24
									HIGH LINE	LOW LINE	
5FR5D	5	5	50	0.25	37	270	50	100	34	42	96.30
5FR12D	5	12	29	0.35	42	333	50	100	38	48	96.30
5FR15D	5	15	23	0.35	45	311	50	120	41	52	96.30
12FR5D	12	5	50	0.25	40	104	50	32	36	45	96.30
12FR12D	12	12	29	0.35	49	119	50	39	44	55	96.30
12FR15D	12	15	23	0.35	49	119	50	35	44	55	96.30
24FR5D	24	5	50	0.25	39	53	50	18	35	44	96.30
24FR12D	24	12	29	0.35	46	63	50	22	41	52	96.30
24FR15D	24	15	23	0.35	47	62	50	22	42	53	96.30
28FR5D	28	5	50	0.25	34	53	50	18	31	39	96.30
28FR12D	28	12	29	0.35	40	63	50	22	36	45	96.30
28FR15D	28	15	23	0.35	40	62	50	22	36	45	96.30

\*Input voltage  $\pm 10\%$

Ordering Instructions: No minimum. Net 30 days F.O.B. Mt. Vernon, New York.

**PICO**  
**Electronics, Inc.**

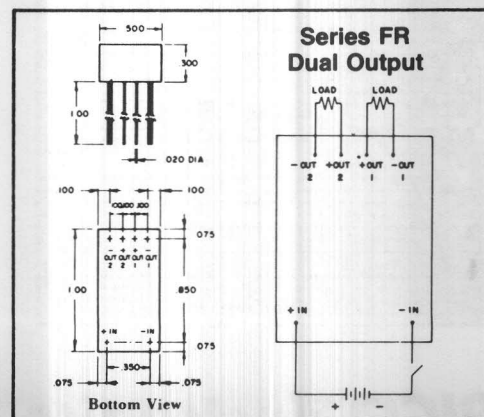
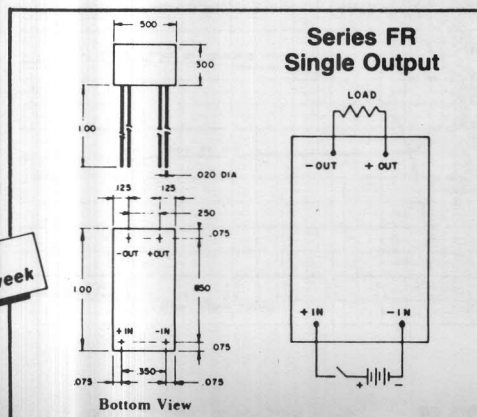
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# SERIES GR Hi Reliability Isolated Regulated DC-DC Converters

## TYPICAL CHARACTERISTICS FOR ALL MODELS:

Test conditions: 25°C ambient

Output voltage tolerance:  $\pm 1\%$  on all units

Line regulation:  $\pm 0.1\%$  (for the input voltage range of  $\pm 10\%$ )

Load regulation: 0.2% (from full load to no load)

Converter frequency: 20-40K Hz.

Operating temperature: -25°C to +70°C ambient

Output voltage temperature coefficient: 0.005%/°C

Storage temperature: -55°C to +125°C

Isolation: 100 megohms minimum at 500 volts DC

Short circuit protection: Temporary

- OPTIONS AVAILABLE**
- Expanded operating temp. (-55°C to +85°C)
  - Stabilization Bake (125°C ambient)
  - Temperature Cycle (-55°C to +125°C)
  - Hi Temp, full power burn in (100% power, 125°C case temp)

**No Heat Sink  
or Electrical  
Derating Required**

**Low Profile  
0.35" Height!  
Up to 3.5 Watts**

## FEATURES:

- Excellent voltage regulation  $\pm 0.1\%$
- Encapsulated semiconductors, conservatively rated for maximum reliability.
- Excellent load regulation 0.2%
- Up to 3.5 watts output power at 70°C ambient
- Low output ripple
- 100 megohm 500V DC isolation
- Single and dual isolated outputs
- No heat sink required
- Miniature size
- No output capacitor required

This series of encapsulated converters come in 24 different models. The units feature single and isolated dual outputs. They will operate over a temperature range of -25°C to +70°C. No heat sink is required. These units are excellent for applications where the input voltage varies  $\pm 10\%$  and the output must be held to  $\pm 0.1\%$ . The output voltage is maintained to within 0.2% from no load to full load.

## SERIES GR - SINGLE OUTPUT

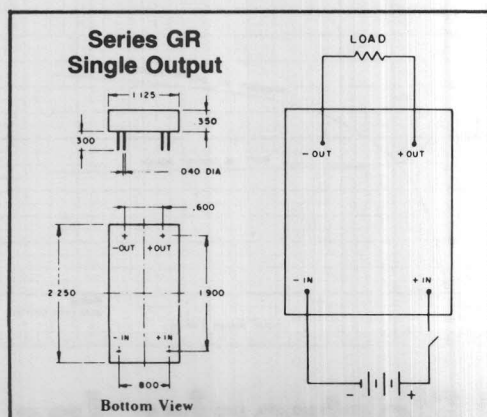
PICO PART NUMBER	* INPUT VOLTAGE (V dc)	OUTPUT VOLTAGE (V dc)	MAX. LOAD CURRENT (mA)	MAX. OUTPUT POWER (watts)	EFF. @ FULL LOAD AT NOMINAL INPUT VOLTAGE TYPICAL (%)	INPUT CURRENT @ FULL LOAD TYPICAL (mA) AT NOMINAL INPUT VOLTAGE	OUTPUT VOLTAGE RIPPLE @ FULL LOAD (mVp-p) max.	INPUT CURRENT @ NO LOAD TYPICAL AT NOMINAL INPUT VOLTAGE (mA)	EFF. @ FULL LOAD TYPICAL %		PRICE 1-24
									HIGH LINE	LOW LINE	
5GR5S	5	5	300	1.5	43	698	50	85	39	48	75.14
5GR12S	5	12	208	2.5	56	893	50	90	51	63	75.14
5GR15S	5	15	167	2.5	57	877	50	100	52	64	75.14
12GR5S	12	5	300	1.5	46	272	50	12	42	52	75.14
12GR12S	12	12	292	3.5	60	486	50	29	54	67	75.14
12GR15S	12	15	233	3.5	62	470	50	31	56	69	75.14
24GR5S	24	5	400	2.0	46	181	50	7	42	52	75.14
24GR12S	24	12	292	3.5	58	251	50	17	53	65	75.14
24GR15S	24	15	233	3.5	64	228	50	25	57	71	75.14
28GR5S	28	5	400	2.0	39	181	50	7	35	44	75.14
28GR12S	28	12	292	3.5	50	251	50	17	45	56	75.14
28GR15S	28	15	233	3.5	55	228	50	25	49	62	75.14

## SERIES GR - DUAL OUTPUT

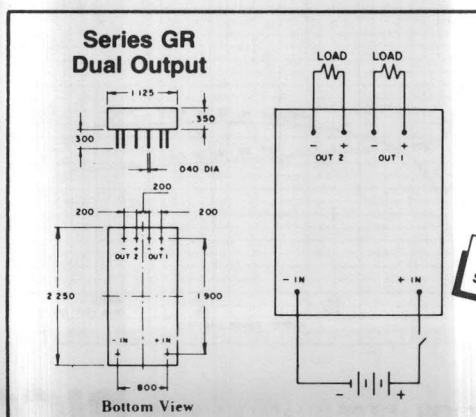
PICO PART NUMBER	* INPUT VOLTAGE (V dc)	DUAL OUTPUT VOLTAGE ISOLATED (V dc)	MAX. LOAD CURRENT PER OUTPUT (mA)	MAX. OUTPUT POWER PER OUTPUT (watts)	EFF. @ FULL LOAD AT NOMINAL INPUT VOLTAGE TYPICAL (%)	INPUT CURRENT/FULL LOAD TYPICAL (mA) AT NOMINAL INPUT VOLTAGE	OUTPUT VOLTAGE RIPPLE @ FULL LOAD (mVp-p) max.	INPUT CURRENT @ NO LOAD TYPICAL AT NOMINAL INPUT VOLTAGE (mA)	EFF. @ FULL LOAD TYPICAL %		PRICE 1-24
									HIGH LINE	LOW LINE	
5GR5D	5	5	150	0.75	43	698	50	102	39	49	89.62
5GR12D	5	12	104	1.25	55	909	50	120	50	62	89.62
5GR15D	5	15	83	1.25	56	893	50	128	50	63	89.62
12GR5D	12	5	150	0.75	46	272	50	33	41	51	89.62
12GR12D	12	12	146	1.75	59	494	50	35	53	66	89.62
12GR15D	12	15	117	1.75	61	478	50	37	55	68	89.62
24GR5D	24	5	200	1.00	46	181	50	15	42	52	89.62
24GR12D	24	12	146	1.75	58	251	50	18	52	65	89.62
24GR15D	24	15	117	1.75	64	228	50	21	58	72	89.62
28GR5D	28	5	200	1.00	39	181	50	15	35	44	89.62
28GR12D	28	12	146	1.75	50	251	50	18	45	56	89.62
28GR15D	28	15	117	1.75	55	228	50	21	49	62	89.62

Ordering Instructions: No minimum. Net 30 days F.O.B. Mt. Vernon, New York.

\*Input voltage  $\pm 10\%$



Typical Weight: 29 Grams



Typical Weight: 29 Grams

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# SERIES M PICO

**Hi Reliability  
Ultra-Miniature  
Isolated DC-DC  
Converters**  
-55°C + 85°C

**OPTIONS AVAILABLE  
PER MIL-STD-883**

- Stabilization Bake
- Temperature Cycle
- Hi Temperature Burn In  
160 Hours at Full Power

# MILITARY DC-DC CONVERTERS

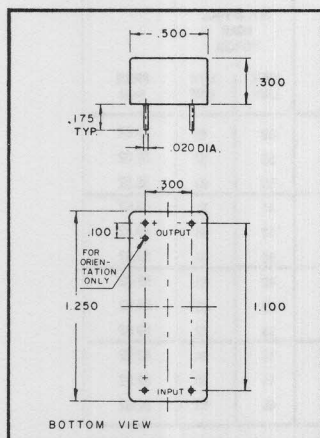
- Diodes JAN TX
- Transformers manufactured to MIL-T-27 (TF5S40ZZ)
- Capacitors MIL-C-39003, S Level  
MIL-C-55681, S Level
- Resistors MIL-R-39008, S Level
- Transistors Hermetically Sealed, Screened  
per MIL-S-19500, Table II, JAN TXV



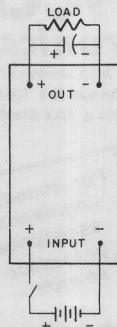
## FEATURES

- Up to 1.25 watt output at 85°C ambient
- Ultra-miniature size (0.3" Height)
- 4 input voltage ranges 5, 12, 24 and 28 V DC
- 100 megohm @ 500V DC isolation
- Input/output isolation
- Single and dual output
- No heat sink required
- Shielded
- 24 Pin Dip compatible

This series of unregulated DC-DC converters are encapsulated in an ultra-miniature 5 sided shielding package. 54 different models are available. The units feature single and dual outputs. They will operate over the temperature range of -55°C to +85°C. No heat sink is required.



Typical Weight: 9.0 Grams



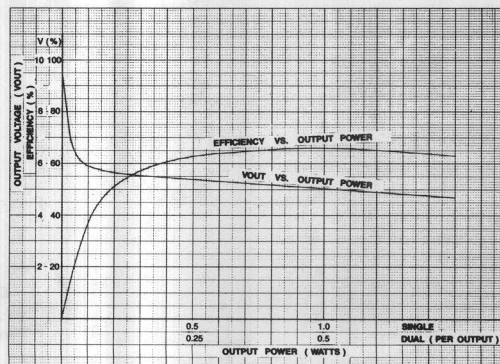
## SERIES M - SINGLE OUTPUT

PICO PART NUMBER	INPUT VOLTAGE (V DC)	OUTPUT VOLTAGE (V DC)	MAX. LOAD CURRENT (mA)	MAX. OUTPUT POWER (watts)	EFF. @ FULL LOAD TYPICAL (%)	INPUT CURRENT FULL LOAD TYPICAL (mA)	OUTPUT VOLTAGE RIPPLE @ FULL LOAD* (Vp-p max)	NO LOAD CURRENT TYPICAL (mA)	FULL LOAD OUTPUT VOLTAGE TOLERANCE (V DC)	PRICE 1-24
5M5S	5	5	200	1.00	65	308	0.20	65	±0.25	315.65
5M9S	5	9	139	1.25	71	352	0.15	80	±0.3	315.65
5M12S	5	12	104	1.25	74	338	0.15	80	±0.4	315.65
5M15S	5	15	83	1.25	74	338	0.12	90	±0.4	315.65
5M24S	5	24	52	1.25	77	325	0.10	90	±0.5	315.65
5M28S	5	28	45	1.25	76	329	0.10	90	±0.5	315.65
12M5S	12	5	200	1.00	67	124	0.15	40	±0.25	315.65
12M9S	12	9	139	1.25	74	141	0.15	40	±0.3	315.65
12M12S	12	12	104	1.25	76	137	0.12	40	±0.4	315.65
12M15S	12	15	83	1.25	76	137	0.12	40	±0.4	315.65
12M24S	12	24	52	1.25	78	134	0.08	40	±0.5	315.65
12M28S	12	28	45	1.25	80	130	0.08	40	±0.5	315.65
12M48S	12	48	26	1.25	80	130	0.08	40	±0.7	315.65
24M5S	24	5	200	1.00	67	62	0.15	13	±0.25	315.65
24M9S	24	9	139	1.25	74	70	0.15	15	±0.3	315.65
24M12S	24	12	104	1.25	75	69	0.10	15	±0.4	315.65
24M15S	24	15	83	1.25	78	67	0.10	15	±0.4	315.65
24M24S	24	24	52	1.25	82	64	0.10	15	±0.5	315.65
24M28S	24	28	45	1.25	79	66	0.10	15	±0.5	315.65
24M48S	24	48	26	1.25	80	65	0.07	16	±0.7	315.65
28M5S	28	5	200	1.00	68	53	0.15	12	±0.25	315.65
28M9S	28	9	139	1.25	76	59	0.15	14	±0.3	315.65
28M12S	28	12	104	1.25	78	57	0.12	14	±0.4	315.65
28M15S	28	15	83	1.25	79	57	0.10	14	±0.4	315.65
28M24S	28	24	52	1.25	81	55	0.09	14	±0.5	315.65
28M28S	28	28	45	1.25	81	55	0.09	14	±0.5	315.65
28M48S	28	48	26	1.25	80	56	0.09	15	±0.7	315.65

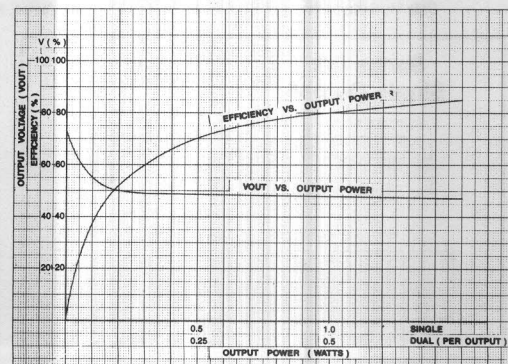
\*Ripple is measured with 10μF, 75 volt high quality tantalum capacitor which is required across the output.

Ordering Instructions: No minimum. Net 30 days F.O.B. Mt. Vernon, New York.

## SERIES M SINGLE & DUAL 5V-5V



## SERIES M SINGLE & DUAL 12V-48V

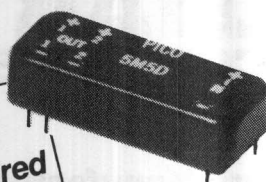




# PICO's MILITARY DC-DC CONVERTERS

Low Profile 1.250" x .5" x .3" ht. up to 1.25 Watts

No Heat Sink  
or Electrical  
Derating Required



**OPTIONS AVAILABLE  
PER MIL-STD-883**

- Stabilization Bake
- Temperature Cycle
- Hi Temperature Burn In  
160 Hours at Full Power

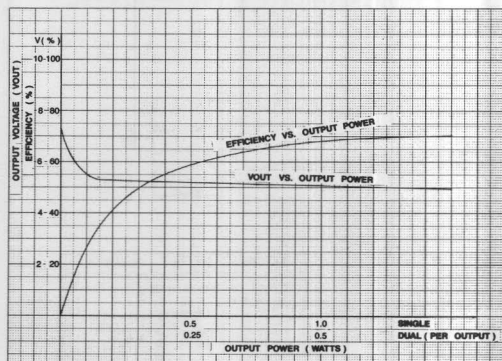
## SERIES M - DUAL OUTPUT

PICO PART NUMBER	INPUT VOLTAGE (V DC)	DUAL OUTPUT VOLTAGE (V DC)	MAX. LOAD CURRENT PER OUTPUT (mA)	MAX. OUTPUT POWER PER OUTPUT (watts)	EFF. @ FULL LOAD TYPICAL (%)	INPUT CURRENT FULL LOAD TYPICAL (mA)	OUTPUT VOLTAGE RIPPLE @ FULL LOAD* (Vp-p max)	NO LOAD CURRENT TYPICAL (mA)	FULL LOAD OUTPUT VOLTAGE TOLERANCE (V DC)	PRICE 1-24
5M5D	5	5	100	0.5	65	308	0.20	65	±0.25	373.43
5M9D	5	9	69	0.625	71	352	0.15	80	±0.3	373.43
5M12D	5	12	52	0.625	74	338	0.15	80	±0.4	373.43
5M15D	5	15	42	0.625	74	338	0.12	90	±0.4	373.43
5M24D	5	24	26	0.625	77	325	0.10	90	±0.5	373.43
5M28D	5	28	22	0.625	76	329	0.10	90	±0.5	373.43
12M5D	12	5	100	0.5	67	124	0.15	40	±0.25	373.43
12M9D	12	9	69	0.625	74	141	0.15	40	±0.3	373.43
12M12D	12	12	52	0.625	76	137	0.12	40	±0.4	373.43
12M15D	12	15	42	0.625	76	137	0.12	40	±0.4	373.43
12M24D	12	24	26	0.625	78	134	0.08	40	±0.5	373.43
12M28D	12	28	22	0.625	80	130	0.08	40	±0.5	373.43
12M48D	12	48	13	0.625	80	130	0.05	40	±0.7	373.43
24M5D	24	5	100	0.5	67	62	0.15	13	±0.25	373.43
24M9D	24	9	69	0.625	74	70	0.15	15	±0.3	373.43
24M12D	24	12	52	0.625	75	69	0.10	15	±0.4	373.43
24M15D	24	15	42	0.625	78	67	0.10	15	±0.4	373.43
24M24D	24	24	26	0.625	82	64	0.10	15	±0.5	373.43
24M28D	24	28	22	0.625	79	66	0.10	15	±0.5	373.43
24M48D	24	48	13	0.625	80	65	0.07	16	±0.7	373.43
28M5D	28	5	100	0.5	68	53	0.15	12	±0.25	373.43
28M9D	28	9	69	0.625	76	59	0.15	14	±0.3	373.43
28M12D	28	12	52	0.625	78	57	0.12	14	±0.4	373.43
28M15D	28	15	42	0.625	79	57	0.10	14	±0.4	373.43
28M24D	28	24	26	0.625	81	55	0.09	14	±0.5	373.43
28M28D	28	28	22	0.625	81	55	0.09	14	±0.5	373.43
28M48D	28	48	13	0.625	80	56	0.09	15	±0.7	373.43

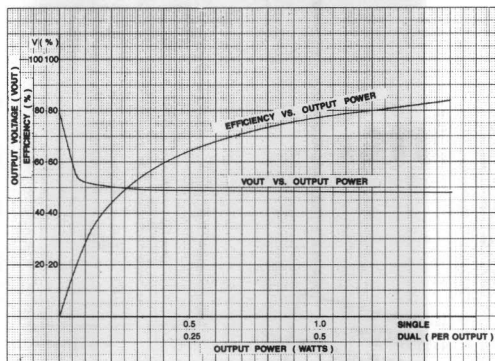
\*The ripple is measured with 10 $\mu$ F, 75 volt high quality tantalum capacitor which is required across each output.

Ordering Instructions: No minimum. Net 30 days F.O.B. Mt. Vernon, New York.

## SERIES M SINGLE & DUAL 24V-5V



## SERIES M SINGLE & DUAL 28V-48V



## TYPICAL CHARACTERISTICS:

Test conditions: 25°C ambient and input voltage at nominal value unless otherwise specified.

**LINE REGULATION: OUTPUT IS DIRECTLY PROPORTIONAL TO THE INPUT**

Input voltage range: 5V models 4 to 6.5V DC  
12V models 9 to 15V DC  
24V models 17 to 28V DC  
28V models 21 to 32V DC

Output voltage tolerance at full load:  
5V models  $\pm 0.25V$   
9V models  $\pm 0.3V$   
12V & 15V models  $\pm 0.4V$   
24V & 28V models  $\pm 0.5V$   
48V models  $\pm 0.7V$

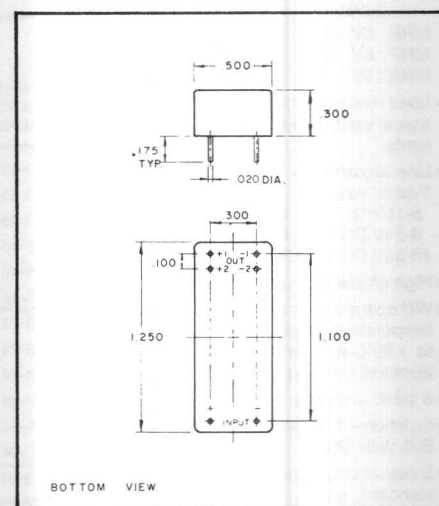
Converter frequency: 20 - 40 KHz

Output temperature coefficient:  
0.05%/°C for 5V and 9V outputs.  
0.02%/°C for 12, 15, 24, 28, 48V outputs.

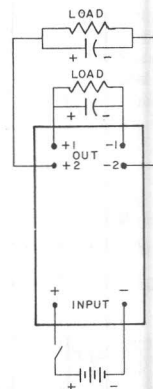
Operating temperature: -55°C to +85°C ambient.  
No heat sink is required.  
No electrical derating required.

Storage temperature: -55°C to +125°C

Isolation: 100 megohms min. @ 500V DC



Typical Weight: 9.0 Grams



**PICO**  
**Electronics, Inc.**

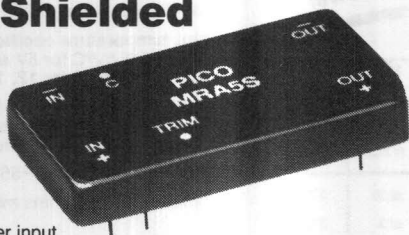
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Mt. Vernon, New York 10552

914-699-5514

Delivery—  
stock to one week

For immediate engineering assistance or to place an order—Call Toll Free 800-431-1064 • FAX 914-699-5565

**SERIES MR**  
**Hi Reliability**  
**Ultra-Miniature**  
**Fully Regulated 2.5 Watts**  
**Isolated DC-DC Converters**  
**-55°C to +85°C**  
**Wide Input Range**  
**All Units Shielded**



**FEATURES:**

- Voltage regulation over input of  
 LOW HI  
 MRE 5V 15V  
 MRF 8V 24V  
 MRA 18V 36V
- Load regulation (see table for typical variation at different loads)
- Line regulation =  
 Typical values  
 5-15V DC =  $\pm 1.0\%$   
 8-24V DC =  $\pm 1.0\%$   
 18-36V DC =  $\pm 2.0\%$
- High efficiency—up to 78%
- Will operate over a temperature range of -55°C to +85°C with no heat sink or electrical derating
- 6 sided shielding
- Isolation—100 megohms at 500 Volts DC
- External output trimming pin • standard, +5%
- Single and dual isolated outputs
- Each unit is supplied with an external control pin. This "C" pin, when connected to the negative (-) input, will disable the unit, allowing for remote shutdown.

**Wide Input-Low Profile .300"**  
**MILITARY**  
**DC-DC CONVERTERS**

- Diodes JAN TX
- Transformers Manufactured to MIL-T-27 (TF5S03ZZ)
- Capacitors MIL-C 55365/4 MIL-C 39003/03  
 MIL-C 20/27E MIL-C 39014/05
- Resistors MIL-R-39017 MIL-R-22097
- IC Hermetically Sealed (MIL-STD-883 Screened)

**SERIES MR-SINGLE OUTPUT**

PICO PART NUMBER	INPUT VOLTAGE RANGE	OUTPUT VOLTAGE DC	MAX. LOAD CURRENT (mA)	MAX OUTPUT POWER (watts)	EFF. @ FULL LOAD TYPICAL (%)	INPUT CURRENT FULL LOAD TYPICAL (mA)	OUT VOLT RIPPLE @ FULL LD. 1-1 MHz BW mv p-p	OUT VOLT TOLERANCE (±%)	V LD. REG. 25%-100% LOAD (±%)	LINE REGULATION (±%)	PRICE 1-24
MRE5S	5-15	5	300	1.5	70	214	200	0.75	1.75	1.75	525.50
MRE9S	5-15	9	167	1.5	75	200	150	0.50	1.25	1.50	525.50
MRE12S	5-15	12	125	1.5	75	200	150	0.50	1.00	1.25	525.50
MRE15S	5-15	15	100	1.5	76	197	150	0.50	1.00	1.25	525.50
MRE24S	5-15	24	63	1.5	77	195	150	0.50	0.75	1.00	525.50
MRE28S	5-15	28	54	1.5	78	192	200	0.50	0.75	0.75	525.50
MRF5S	8-24	5	400	2.0	70	179	200	0.75	1.75	1.50	525.50
MRF9S	8-24	9	222	2.0	75	167	150	0.50	1.25	1.25	525.50
MRF12S	8-24	12	167	2.0	75	167	150	0.50	1.00	1.00	525.50
MRF15S	8-24	15	133	2.0	76	164	150	0.50	1.00	1.00	525.50
MRF24S	8-24	24	83	2.0	77	162	150	0.50	0.75	1.00	525.50
MRF28S	8-24	28	71	2.0	78	160	200	0.50	0.75	0.75	525.50
MRA5S	18-36	5	400	2.0	70	106	200	0.75	1.75	1.00	525.50
MRA9S	18-36	9	278	2.5	75	123	150	0.50	1.25	0.75	525.50
MRA12S	18-36	12	208	2.5	75	123	150	0.50	1.00	0.75	525.50
MRA15S	18-36	15	167	2.5	76	122	150	0.50	1.00	0.75	525.50
MRA24S	18-36	24	104	2.5	77	120	150	0.50	0.75	0.75	525.50
MRA28S	18-36	28	89	2.5	78	119	200	0.50	0.75	0.50	525.50

\*Measurements taken with input voltage set at mid value.

Ordering Instructions: No minimum. Net 30 days F.O.B. Mt. Vernon, New York

‡ 10% minimum load required.

For immediate engineering assistance  
 or to place an order—

Call Toll Free 800-431-1064

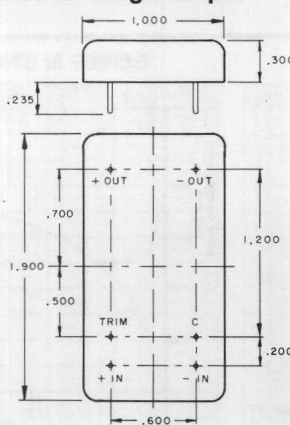
**PICO**  
**Electronics, Inc.**

453 North MacQuesten Pkwy.,  
 Mt. Vernon, New York 10552

914-699-5514 • FAX 914-699-5565

**Delivery—  
 stock to one week**

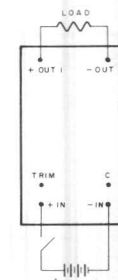
**Series MR-Single Output**



C: IS CONTROL PIN  
 ALL RADII TYP 1/16"

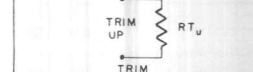
BOTTOM VIEW

TYPICAL WEIGHT: 26 Grams



**EXTERNAL OUTPUT TRIMMING**

Output can be externally trimmed up by +5%



Each unit is supplied with an external control pin. This "C" pin, when connected to the negative (-) input, will disable the unit, allowing for remote shutdown.



This series of high efficiency wide input range, encapsulated regulators come in 36 different models. Manufactured using high grade military components, this unit will operate from  $-55^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$  with no heat sink or electrical derating required. The 6 sided shielding and 32 pin DIP compatability combined with input/output isolation and the wide input range capabilities will meet your most stringent military requirements.

#### TYPICAL CHARACTERISTICS:

Test conditions:  $25^{\circ}\text{C}$  ambient

Operating temperature:  $-55^{\circ}\text{C}$  to  $85^{\circ}\text{C}$  ambient

Output voltage tolerance:  $\pm 1\%$  at typical input voltage

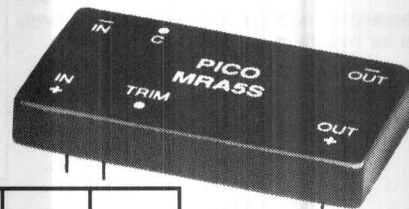
Output voltage temperature coefficient:  $0.02\%/^{\circ}\text{C}$

Storage temperature:  $-55^{\circ}\text{C}$  to  $+125^{\circ}\text{C}$

Short circuit protection: Temporary

Operating frequency: 40 Khtz, typ.

**No Heat Sink  
or Electrical  
Derating Required**



(1.9" x 1.0" x .300")

#### SERIES MR-DUAL OUTPUT

PICO PART NUMBER	INPUT VOLTAGE RANGE	OUTPUT VOLTAGE DC PER OUTPUT	MAX. LOAD CURRENT (mA) PER OUTPUT	MAX. OUTPUT POWER (watts) PER OUTPUT	EFF. @ FULL LOAD TYPICAL (%)*	INPUT CURRENT FULL LOAD TYPICAL (mA)*	OUT VOLT RIPPLE @ FULL L.D. 1-1 MHz BW mv p-p	OUT VOLT TOLERANCE ( $\pm\%$ )*	V L.D. REG. 25%-100% LOAD $\pm$ ( $\pm\%$ )*	LINE REGU- LATION ( $\pm\%$ )*	PRICE 1-24
MRE5D	5-15	5	150	.75	70	214	200	0.75	1.75	1.75	595.00
MRE9D	5-15	9	84	.75	75	200	150	0.50	1.25	1.50	595.00
MRE12D	5-15	12	63	.75	75	200	150	0.50	1.00	1.25	595.00
MRE15D	5-15	15	50	.75	76	197	150	0.50	1.00	1.25	595.00
MRE24D	5-15	24	32	.75	77	195	150	0.50	0.75	1.00	595.00
MRE28D	5-15	28	27	.75	78	192	200	0.50	0.75	0.75	595.00
MRF5D	8-24	5	200	1.00	70	179	200	0.75	1.75	1.50	595.00
MRF9D	8-24	9	111	1.00	75	167	150	0.50	1.25	1.25	595.00
MRF12D	8-24	12	84	1.00	75	167	150	0.50	1.00	1.00	595.00
MRF15D	8-24	15	67	1.00	76	164	150	0.50	1.00	1.00	595.00
MRF24D	8-24	24	42	1.00	77	162	150	0.50	0.75	1.00	595.00
MRF28D	8-24	28	36	1.00	78	160	200	0.50	0.75	0.75	595.00
MRA5D	18-36	5	200	1.00	70	106	200	0.75	1.75	1.00	595.00
MRA9D	18-36	9	139	1.25	75	123	150	0.50	1.25	0.75	595.00
MRA12D	18-36	12	104	1.25	75	123	150	0.50	1.00	0.75	595.00
MRA15D	18-36	15	84	1.25	76	122	150	0.50	1.00	0.75	595.00
MRA24D	18-36	24	52	1.25	77	120	150	0.50	0.75	0.75	595.00
MRA28D	18-36	28	45	1.25	78	119	200	0.50	0.75	0.50	595.00

**OPTIONS AVAILABLE  
PER MIL-STD-883**

- Stabilization Bake
- Temperature Cycle
- Hi Temperature Burn In  
160 Hours at Full Power

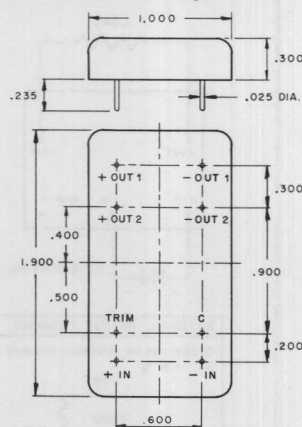
**Standard  
Operating  
Temperature  
 $-55^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$**

\* 10% minimum load required.

\* Measurements taken with input voltage set at mid value.

Ordering Instructions: No minimum. Net 30 days F.O.B. Mt. Vernon, New York.

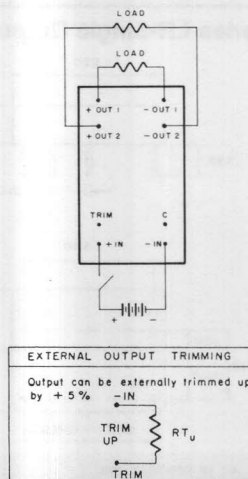
#### Series MR-Dual Output



C: IS CONTROL PIN  
ALL RADII TYP 1/16"

BOTTOM VIEW

TYPICAL. WEIGHT: 26 Grams



EXTERNAL OUTPUT TRIMMING  
Output can be externally trimmed up  
by  $\pm 5\%$

Each unit is supplied with an external control pin. This 'C' pin, when connected to the negative (-) input, will disable the unit, allowing for remote shutdown.

For immediate engineering assistance  
or to place an order—

Call Toll Free 800-431-1064

**PICO  
Electronics, Inc.**

453 North MacQuesten Pkwy.,  
Mt. Vernon, New York 10552

914-699-5514 • FAX 914-699-5565

**Delivery—  
stock to one week**

# SERIES LR

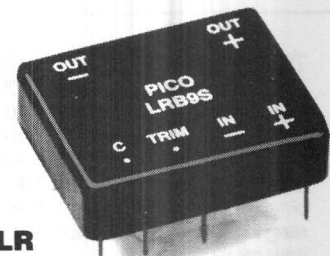
## Isolated Regulated up to 5 Watt

## DC-DC Converters

## Wide Input Range/up to 3.33:1

## Fully Regulated

## All Units Shielded



**New 100 VDC  
Output Models**

### SERIES LR SINGLE OUTPUT

#### FEATURES:

- Voltage regulation over input of LOW HI  
LRE 5V 15V  
LRF 8V 24V  
LRA 18V 36V  
LRB 36V 60V  
LRC 18V 60V
- Encapsulated semiconductors, conservatively rated for maximum reliability.
- Load regulation (see table for typical variation at different loads)
- Line regulation = Typical values  
5-15 V DC =  $\pm 1.5\%$   
8-24 V DC =  $\pm 1.5\%$   
18-36 V DC =  $\pm 1.0\%$   
36-60 V DC =  $\pm 1.0\%$   
18-60 V DC =  $\pm 1.5\%$
- High efficiency—up to 80%
- Will operate over a temperature range of  $-25^{\circ}\text{C}$  to  $+70^{\circ}\text{C}$  with no heat sink or electrical derating
- 6 sided shielding
- Isolation—100 megohms at 500 volts DC
- External output trimming pin standard,  $+5\%$
- Single and dual isolated outputs
- Each unit is supplied with an external control pin. This "C" pin, when connected to the negative (-) input, will disable the unit, allowing for remote shutdown.

#### OPTIONS AVAILABLE

- Expanded operating temp. ( $-55^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$ )
- Stabilization Bake ( $125^{\circ}\text{C}$  ambient)
- Temperature Cycle ( $-55^{\circ}\text{C}$  to  $+125^{\circ}\text{C}$ )
- Hi Temp, full power burn in (100% power,  $125^{\circ}\text{C}$  case temp)

**Low Profile  
Less Than 0.5" ht.**  
For 0.3" ht. see pages 74/75

PICO PART NUMBER	INPUT VOLTAGE RANGE	OUTPUT VOLTAGE DC	MAX. LOAD CURRENT mA	MAX. OUTPUT POWER (watts)	EFF. @ FULL LOAD TYPICAL (%)	INPUT CURRENT FULL LOAD TYPICAL (mA)	OUT VOLT RIPPLE @ FULL LD. 1-1 MHz BW mv p-p	OUT VOLT TOLERANCE ( $\pm\%$ )	VLD. REG. 25%-100% LOAD ( $\pm\%$ )	LINE REGULATION ( $\pm\%$ )	PRICE 1-24
LRE5S	5-15	5	600	3	78	385	150	0.75	1.50	2.00	117.70
LRE9S	5-15	9	444	4	78	515	125	0.50	1.25	1.50	117.70
LRE12S	5-15	12	333	4	79	505	125	0.50	1.25	1.25	117.70
LRE15S	5-15	15	267	4	79	505	125	0.50	1.25	1.25	117.70
LRE24S	5-15	24	167	4	80	500	125	0.50	1.00	1.25	117.70
LRE28S	5-15	28	143	4	80	500	125	0.50	1.00	1.00	117.70
LRE48S	5-15	48	83	4	80	500	175	0.50	1.00	1.00	117.70
LRE100S	5-15	100	40	4	80	500	200	0.50	1.00	1.00	147.13
LRF5S	8-24	5	1000	5	78	400	150	0.75	1.50	2.00	117.70
LRF9S	8-24	9	556	5	78	400	125	0.50	1.25	1.50	117.70
LRF12S	8-24	12	417	5	79	395	125	0.50	1.25	1.25	117.70
LRF15S	8-24	15	333	5	79	395	125	0.50	1.25	1.25	117.70
LRF24S	8-24	24	208	5	80	390	125	0.50	1.00	1.25	117.70
LRF28S	8-24	28	179	5	80	390	125	0.50	1.00	1.00	117.70
LRF48S	8-24	48	104	5	80	390	175	0.50	1.00	1.00	117.70
LRF100S	8-24	100	50	5	80	390	200	0.50	1.00	1.00	147.13
LRA5S	18-36	5	1000	5	76	245	100	0.75	2.00	0.75	117.70
LRA9S	18-36	9	556	5	76	245	100	0.50	2.00	0.50	117.70
LRA12S	18-36	12	417	5	77	240	100	0.50	2.00	0.50	117.70
LRA15S	18-36	15	333	5	79	235	100	0.50	1.50	0.50	117.70
LRA24S	18-36	24	208	5	80	230	100	0.50	1.50	0.25	117.70
LRA28S	18-36	28	179	5	80	230	100	0.50	1.50	0.25	117.70
LRA48S	18-36	48	104	5	80	230	150	0.50	1.00	0.25	117.70
LRA100S	18-36	100	50	5	80	230	200	0.50	1.00	0.50	147.13
LRB5S	36-60	5	1000	5	74	140	100	0.75	1.25	0.50	139.10
LRB9S	36-60	9	556	5	74	140	100	0.50	1.00	0.25	139.10
LRB12S	36-60	12	417	5	74	140	100	0.50	1.00	0.25	139.10
LRB15S	36-60	15	333	5	76	135	100	0.50	1.00	0.25	139.10
LRB24S	36-60	24	208	5	76	135	100	0.50	0.75	0.25	139.10
LRB28S	36-60	28	179	5	76	135	100	0.50	0.75	0.25	139.10
LRB48S	36-60	48	104	5	76	135	150	0.50	0.75	0.25	139.10
LRB100S	36-60	100	50	5	76	135	200	0.50	1.00	0.50	173.88
LRC5S	18-60	5	1000	5	75	170	100	0.75	2.00	1.25	149.80
LRC9S	18-60	9	556	5	75	170	100	0.50	1.00	0.75	149.80
LRC12S	18-60	12	417	5	75	170	100	0.50	1.00	0.75	149.80
LRC15S	18-60	15	333	5	77	165	100	0.50	1.00	0.75	149.80
LRC24S	18-60	24	208	5	78	165	100	0.50	0.75	0.50	149.80
LRC28S	18-60	28	179	5	78	165	100	0.50	0.75	0.50	149.80
LRC48S	18-60	48	104	5	78	165	150	0.50	0.75	0.50	149.80
LRC100S	18-60	100	50	5	78	165	200	0.50	1.00	0.50	187.50

\* Measurements taken with input voltage set at mid value.  
Ordering Instructions: No minimum. Net 30 days F.O.B. Mt. Vernon, New York.

‡ 10% minimum load required.

Each unit is supplied with an external control pin. This "C" pin, when connected to the negative (-) input, will disable the unit, allowing for remote shutdown.

For immediate engineering assistance  
or to place an order—

Call Toll Free 800-431-1064

# PICO Electronics, Inc.

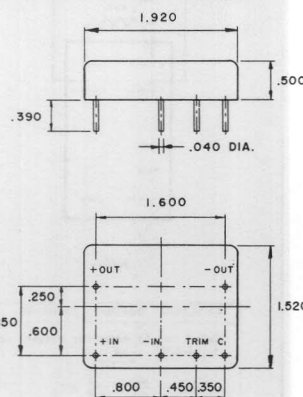
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Mt. Vernon, N.Y. 10552

914-699-5514

FAX 914-699-5565

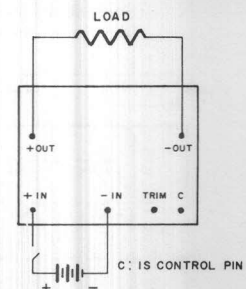
**Delivery—  
stock to one week**

#### Series LR-Single Output



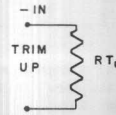
C: IS CONTROL PIN  
NOTE: ALL RADII TO BE 7/64"

BOTTOM VIEW



#### EXTERNAL OUTPUT TRIMMING

Output can be externally trimmed up by  $+5\%$



Typical Weight: 65 Grams



This series of high efficiency, wide input range, encapsulated regulators come in 75 different models. These units feature a 500 VOLT DC input to output isolation in both single and dual output models. The LR Series will operate over a temperature range of -25°C TO +70°C with no heat sink or electrical derating. These units are excellent for applications where input voltage varies dramatically, yet a high efficiency and output voltage regulation must be maintained.

#### TYPICAL CHARACTERISTICS:

Test conditions: 25°C ambient

Operating temperature: -25° C to +70° C ambient

Output voltage tolerance:  $\pm 1\%$  at typical input voltage

Output voltage temperature coefficient: 0.02%/°C

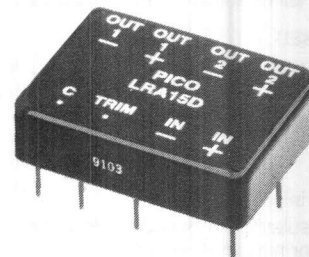
Storage temperature: -55°C to 125°C

Short circuit protection: Temporary

Operating frequency: 40 Khtz, typ.

#### SERIES LR - DUAL OUTPUT

PICO PART NUMBER	INPUT VOLTAGE RANGE	OUTPUT VOLTAGE DC PER OUTPUT	MAX. LOAD CURRENT (mA) PER OUTPUT	MAX. OUTPUT POWER (watts) PER OUTPUT	EFF. @ FULL LOAD TYPICAL (%)*	INPUT CURRENT FULL LOAD TYPICAL (mA)*	OUT VOLT RIPPLE @ FULL LD. 1-1 MHz BW mv p-p	OUT VOLT TOLERANCE ( $\pm\%$ )*	V LD. REG. 25%-100% LOAD $\ddagger$ ( $\pm\%$ )*	LINE REGULATION ( $\pm\%$ )*	PRICE 1-24
LRE5D	5-15	5	300	1.5	78	385	150	0.75	1.50	2.00	144.45
LRE9D	5-15	9	222	2.0	78	515	125	0.50	1.25	1.50	144.45
LRE12D	5-15	12	167	2.0	79	505	125	0.50	1.25	1.25	144.45
LRE15D	5-15	15	134	2.0	79	505	125	0.50	1.25	1.25	144.45
LRE24D	5-15	24	84	2.0	80	500	125	0.50	1.00	1.25	144.45
LRE28D	5-15	28	72	2.0	80	500	125	0.50	1.00	1.00	144.45
LRE48D	5-15	48	42	2.0	80	500	175	0.50	1.00	1.00	144.45
LRF5D	8-24	5	500	2.5	78	400	150	0.75	1.50	2.00	144.45
LRF9D	8-24	9	278	2.5	78	400	125	0.50	1.25	1.50	144.45
LRF12D	8-24	12	208	2.5	79	395	125	0.50	1.25	1.25	144.45
LRF15D	8-24	15	167	2.5	79	395	125	0.50	1.25	1.25	144.45
LRF24D	8-24	24	104	2.5	80	390	125	0.50	1.00	1.25	144.45
LRF28D	8-24	28	89	2.5	80	390	125	0.50	1.00	1.00	144.45
LRF48D	8-24	48	52	2.5	80	390	175	0.50	1.00	1.00	144.45
LRA5D	18-36	5	500	2.5	76	245	100	0.75	2.00	0.75	144.45
LRA9D	18-36	9	278	2.5	76	245	100	0.50	2.00	0.50	144.45
LRA12D	18-36	12	208	2.5	77	240	100	0.50	2.00	0.50	144.45
LRA15D	18-36	15	167	2.5	79	235	100	0.50	1.50	0.50	144.45
LRA24D	18-36	24	104	2.5	80	230	100	0.50	1.50	0.25	144.45
LRA28D	18-36	28	89	2.5	80	230	100	0.50	1.50	0.25	144.45
LRA48D	18-36	48	52	2.5	80	230	150	0.50	1.0	0.25	144.45
LRB5D	36-60	5	500	2.5	74	140	100	0.75	1.25	0.50	165.85
LRB9D	36-60	9	278	2.5	74	140	100	0.50	1.00	0.25	165.85
LRB12D	36-60	12	208	2.5	74	140	100	0.50	1.00	0.25	165.85
LRB15D	36-60	15	167	2.5	76	135	100	0.50	1.00	0.25	165.85
LRB24D	36-60	24	104	2.5	76	135	100	0.50	0.75	0.25	165.85
LRB28D	36-60	28	89	2.5	76	135	100	0.50	0.75	0.25	165.85
LRB48D	36-60	48	52	2.5	76	135	150	0.50	0.75	0.25	165.85
LRC5D	18-60	5	500	2.5	75	170	100	0.75	2.00	1.25	176.55
LRC9D	18-60	9	278	2.5	75	170	100	0.50	1.00	0.75	176.55
LRC12D	18-60	12	208	2.5	75	170	100	0.50	1.00	0.75	176.55
LRC15D	18-60	15	167	2.5	77	165	100	0.50	1.00	0.75	176.55
LRC24D	18-60	24	104	2.5	78	165	100	0.50	0.75	0.50	176.55
LRC28D	18-60	28	89	2.5	78	165	100	0.50	0.75	0.50	176.55
LRC48D	18-60	48	52	2.5	78	165	150	0.50	0.75	0.50	176.55



No Heat Sink  
or Electrical  
Derating Required

OPTIONS AVAILABLE  
• Expanded operating temp.  
(-55°C to +85°C)  
• Stabilization Bake  
(125°C ambient)  
• Temperature Cycle  
(-55°C to +125°C)  
• Hi Temp, full power burn  
in (100% power,  
125°C case temp)

Low Profile  
Less Than 0.5" ht.  
For 0.3" ht. see pages 74/75

\*Measurements taken with input voltage set at mid value.

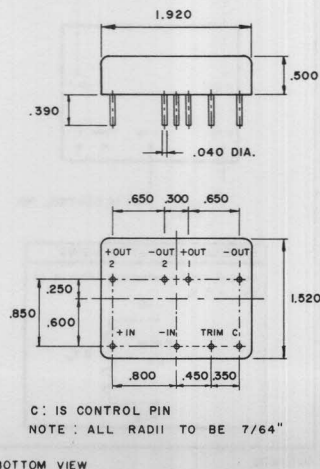
$\ddagger$  10% minimum load required.

Ordering Instructions: No minimum.

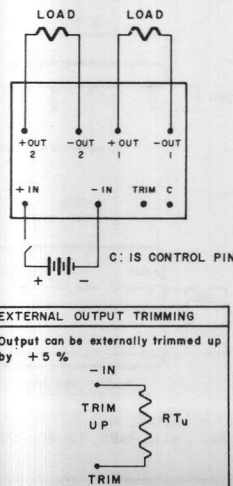
Net 30 days F.O.B. Mt. Vernon, New York.

Each unit is supplied with an external control pin. This "C" pin, when connected to the negative (-) input, will disable the unit, allowing for remote shutdown.

#### Series LR-Dual Output



Typical Weight: 65 Grams



For immediate engineering assistance  
or to place an order—

Call Toll Free 800-431-1064

**PICO**  
**Electronics, Inc.**

453 N. MacQuesten Pkwy.  
Mt. Vernon, N.Y. 10552

914-699-5514 • FAX 914-699-5565

Delivery—  
stock to one week

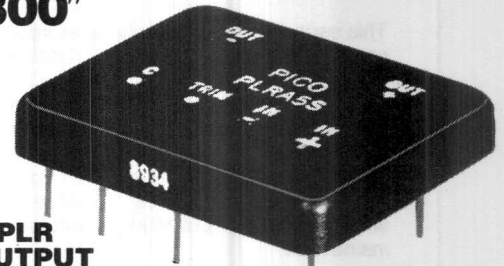
# SERIES PLR- Lowest Profile Series 0.300"

## Isolated Regulated up to 5 Watt DC-DC Converters

### Wide Input Range/up to 3.33:1

### Fully Regulated

### All Units Shielded



**New 100 VDC Output Models**

#### SERIES PLR SINGLE OUTPUT

#### FEATURES:

- Voltage regulation over input of LOW HI  
 PLRE 5V 15V  
 PLRF 8V 24V  
 PLRA 18V 36V  
 PLRB 36V 60V  
 PLRC 18V 60V
- .300" Height
- Encapsulated semiconductors, conservatively rated for maximum reliability.
- Load regulation (see table for typical variation at different loads)
- Line regulation = Typical values  
 5-15 V DC =  $\pm 1.5\%$   
 8-24 V DC =  $\pm 1.5\%$   
 18-36 V DC =  $\pm 1.0\%$   
 36-60 V DC =  $\pm 1.0\%$   
 18-60 V DC =  $\pm 1.5\%$
- High efficiency—up to 80%
- Will operate over a temperature range of  $-25^{\circ}\text{C}$  to  $+70^{\circ}\text{C}$  with no heat sink or electrical derating
- 6 sided shielding
- Isolation—100 megohms at 500 volts DC
- External output trimming pin standard, +5%
- Single and dual isolated outputs
- Each unit is supplied with an external control pin. This "C" pin, when connected to the negative (-) input, will disable the unit, allowing for remote shutdown.

#### OPTIONS AVAILABLE

- Expanded operating temp ( $-55^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$ )
- Stabilization Bake ( $125^{\circ}\text{C}$  ambient)
- Temperature Cycle ( $-55^{\circ}\text{C}$  to  $+125^{\circ}\text{C}$ )
- Hi Temp, full power burn in (100% power,  $125^{\circ}\text{C}$  case temp)

**Low Profile  
0.3" Height**

PICO PART NUMBER	INPUT VOLTAGE RANGE	OUTPUT VOLTAGE DC	MAX. LOAD CURRENT mA	MAX. OUTPUT POWER (watts)	EFF. @ FULL LOAD TYPICAL (%)	INPUT CURRENT FULL LOAD TYPICAL (mA)	OUT VOLT RIPPLE @ FULL LD. 1-1 MHz BW mv p-p	OUT VOLT TOLERANCE ( $\pm\%$ )	VLD. REG. 25%-100% LOAD ( $\pm\%$ )	LINE REGULATION ( $\pm\%$ )	PRICE 1-24
PLRE5S	5-15	5	600	3	78	385	175	0.75	1.75	2.00	176.55
PLRE9S	5-15	9	444	4	78	515	125	0.50	1.50	1.50	176.55
PLRE12S	5-15	12	333	4	79	505	125	0.50	1.25	1.25	176.55
PLRE15S	5-15	15	267	4	79	505	125	0.50	1.25	1.25	176.55
PLRE24S	5-15	24	167	4	80	500	125	0.50	1.00	1.25	176.55
PLRE28S	5-15	28	143	4	80	500	125	0.50	1.00	1.00	176.55
PLRE48S	5-15	48	83	4	80	500	300	0.50	1.00	1.00	176.55
PLRE100S	5-15	100	40	4	80	500	300	0.50	1.0	1.0	220.69
PLRF5S	8-24	5	1000	5	78	400	150	0.75	1.75	2.00	176.55
PLRF9S	8-24	9	556	5	78	400	125	0.50	1.50	1.50	176.55
PLRF12S	8-24	12	417	5	79	395	125	0.50	1.25	1.25	176.55
PLRF15S	8-24	15	333	5	79	395	125	0.50	1.25	1.25	176.55
PLRF24S	8-24	24	208	5	80	390	125	0.50	1.00	1.25	176.55
PLRF28S	8-24	28	179	5	80	390	125	0.50	1.00	1.00	176.55
PLRF48S	8-24	48	104	5	80	390	250	0.50	1.00	1.00	176.55
PLRF100S	8-24	100	50	5	80	390	300	0.50	1.0	1.0	220.69
PLRA5S	18-36	5	1000	5	76	245	100	0.75	2.00	1.00	176.55
PLRA9S	18-36	9	556	5	76	245	100	0.50	2.00	0.50	176.55
PLRA12S	18-36	12	417	5	77	240	100	0.50	2.00	0.50	176.55
PLRA15S	18-36	15	333	5	79	235	100	0.50	1.50	0.50	176.55
PLRA24S	18-36	24	208	5	80	230	100	0.50	1.50	0.50	176.55
PLRA28S	18-36	28	179	5	80	230	100	0.50	1.50	0.50	176.55
PLRA48S	18-36	48	104	5	80	230	250	0.50	1.00	0.50	176.55
PLRA100S	18-36	100	50	5	80	230	300	0.50	1.0	1.0	220.69
PLRB5S	36-60	5	1000	5	74	140	100	0.75	1.75	0.50	208.65
PLRB9S	36-60	9	556	5	74	140	100	0.50	1.50	0.50	208.65
PLRB12S	36-60	12	417	5	74	140	100	0.50	1.00	0.25	208.65
PLRB15S	36-60	15	333	5	76	135	100	0.50	1.00	0.25	208.65
PLRB24S	36-60	24	208	5	76	135	100	0.50	0.75	0.25	208.65
PLRB28S	36-60	28	179	5	76	135	100	0.50	0.75	0.25	208.65
PLRB48S	36-60	48	104	5	76	135	200	0.50	0.75	0.25	208.65
PLRB100S	36-60	100	50	5	76	135	300	0.50	1.0	1.0	260.81
PLRC5S	18-60	5	1000	5	75	170	100	0.75	2.00	1.50	224.70
PLRC9S	18-60	9	556	5	75	170	100	0.50	1.50	1.00	224.70
PLRC12S	18-60	12	417	5	75	170	100	0.50	1.00	0.75	224.70
PLRC15S	18-60	15	333	5	77	165	100	0.50	1.00	0.75	224.70
PLRC24S	18-60	24	208	5	78	165	100	0.50	0.75	0.75	224.70
PLRC28S	18-60	28	179	5	78	165	100	0.50	0.75	0.75	224.70
PLRC48S	18-60	48	104	5	78	165	225	0.50	0.75	0.75	224.70
PLRC100S	18-60	100	50	5	78	165	300	0.50	1.0	1.0	280.88

\*Measurements taken with input voltage set at mid value.

Ordering Instructions: No minimum. Net 30 days F.O.B. Mt. Vernon, New York.

±10% minimum load required.

Each unit is supplied with an external control pin. This "C" pin, when connected to the negative (-) input, will disable the unit, allowing for remote shutdown.

For immediate engineering assistance  
or to place an order—

Call Toll Free 800-431-1064

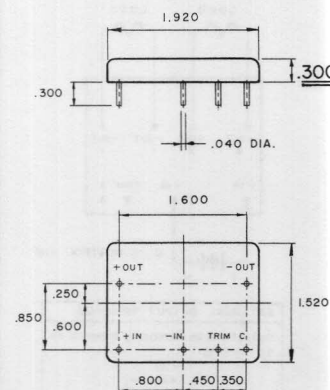
## PICO Electronics, Inc.

453 North MacQuesten Pkwy.,  
Mt. Vernon, New York 10552

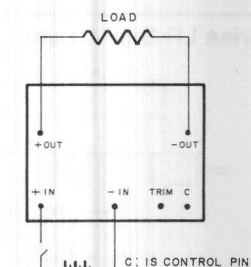
914-699-5514 • FAX 914-699-5565

**Delivery—  
stock to one week**

#### Series PLR-Single Output

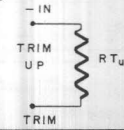


C: IS CONTROL PIN  
NOTE: ALL RADII TO BE 7/64"



#### EXTERNAL OUTPUT: TRIMMING

Output can be externally trimmed up by +5%



Typical Weight: 40 Grams



This series of Low Profile 0.300, high efficiency, wide input range, encapsulated regulators come in 75 different models. These units feature a 500 VOLT DC input to output isolation in both single and dual output models. The PLR Series will operate over a temperature range of -25°C TO +70°C with no heat sink or electrical derating. These units are excellent for applications where input voltage varies dramatically, yet a high efficiency and output voltage regulation must be maintained.

#### TYPICAL CHARACTERISTICS:

Test conditions: 25°C ambient

Operating temperature: -25°C to +70°C ambient

Output voltage tolerance:  $\pm 1\%$  at typical input voltage

Output voltage temperature coefficient: 0.02%/°C

Storage temperature: -55°C to +125°C

Short circuit protection: Temporary

Operating frequency: 40 Khtz, typ.

## Lowest Profile Series 0.300"

### SERIES PLR - DUAL OUTPUT

PICO PART NUMBER	INPUT VOLTAGE RANGE	OUTPUT VOLTAGE DC PER OUTPUT	MAX. LOAD CURRENT (mA) PER OUTPUT	MAX. OUTPUT POWER (watts) PER OUTPUT	EFF. @ FULL LOAD TYPICAL (%)*	INPUT CURRENT FULL LOAD TYPICAL (mA)*	OUT VOLT RIPPLE @ FULL LD. 1-1 MHz BW mv p-p	OUT VOLT TOLERANCE ( $\pm$ %)*	VLD. REG. 25%-100% LOAD $\ddagger$ ( $\pm$ %)*	LINE REGULATION ( $\pm$ %)*	PRICE 1-24
PLRE5D	5-15	5	300	1.5	78	385	175	0.75	1.75	2.00	216.68
PLRE9D	5-15	9	222	2.0	78	515	125	0.50	1.50	1.50	216.68
PLRE12D	5-15	12	167	2.0	79	505	125	0.50	1.25	1.25	216.68
PLRE15D	5-15	15	134	2.0	79	505	125	0.50	1.25	1.25	216.68
PLRE24D	5-15	24	84	2.0	80	500	125	0.50	1.00	1.25	216.68
PLRE28D	5-15	28	72	2.0	80	500	125	0.50	1.00	1.00	216.68
PLRE48D	5-15	48	42	2.0	80	500	300	0.50	1.00	1.00	216.68
PLRF5D	8-24	5	500	2.5	78	400	100	0.75	1.75	2.00	216.68
PLRF9D	8-24	9	278	2.5	78	400	125	0.50	1.50	1.50	216.68
PLRF12D	8-24	12	208	2.5	79	395	125	0.50	1.25	1.25	216.68
PLRF15D	8-24	15	167	2.5	79	395	125	0.50	1.25	1.25	216.68
PLRF24D	8-24	24	104	2.5	80	390	125	0.50	1.00	1.25	216.68
PLRF28D	8-24	28	89	2.5	80	390	125	0.50	1.00	1.00	216.68
PLRF48D	8-24	48	52	2.5	80	390	250	0.50	1.00	1.00	216.68
PLRA5D	18-36	5	500	2.5	76	245	100	0.75	2.00	1.00	216.68
PLRA9D	18-36	9	278	2.5	76	245	100	0.50	2.00	0.50	216.68
PLRA12D	18-36	12	208	2.5	77	240	100	0.50	2.00	0.50	216.68
PLRA15D	18-36	15	167	2.5	79	235	100	0.50	1.50	0.50	216.68
PLRA24D	18-36	24	104	2.5	80	230	100	0.50	1.50	0.50	216.68
PLRA28D	18-36	28	89	2.5	80	230	100	0.50	1.50	0.50	216.68
PLRA48D	18-36	48	52	2.5	80	230	250	0.50	1.00	0.50	216.68
PLRB5D	36-60	5	500	2.5	74	140	100	0.75	1.75	0.50	248.78
PLRB9D	36-60	9	278	2.5	74	140	100	0.50	1.50	0.50	248.78
PLRB12D	36-60	12	208	2.5	74	140	100	0.50	1.00	0.25	248.78
PLRB15D	36-60	15	167	2.5	76	135	100	0.50	1.00	0.25	248.78
PLRB24D	36-60	24	104	2.5	76	135	100	0.50	0.75	0.25	248.78
PLRB28D	36-60	28	89	2.5	76	135	100	0.50	0.75	0.25	248.78
PLRB48D	36-60	48	52	2.5	76	135	200	0.50	0.75	0.25	248.78
PLRC5D	18-60	5	500	2.5	75	170	100	0.75	2.00	1.50	264.83
PLRC9D	18-60	9	278	2.5	75	170	100	0.50	1.50	1.00	264.83
PLRC12D	18-60	12	208	2.5	75	170	100	0.50	1.00	0.75	264.83
PLRC15D	18-60	15	167	2.5	77	165	100	0.50	1.00	0.75	264.83
PLRC24D	18-60	24	104	2.5	78	165	100	0.50	0.75	0.75	264.83
PLRC28D	18-60	28	89	2.5	78	165	100	0.50	0.75	0.75	264.83
PLRC48D	18-60	48	52	2.5	78	165	225	0.50	0.75	0.75	264.83

\*Measurements taken with input voltage set at mid value.

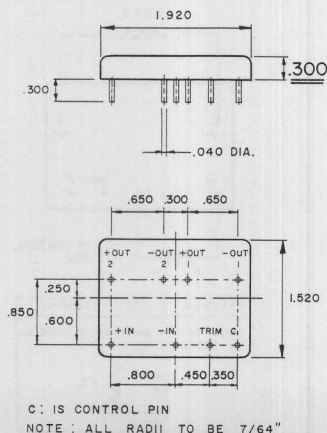
$\ddagger$  10% minimum load required.

#### Ordering Instructions:

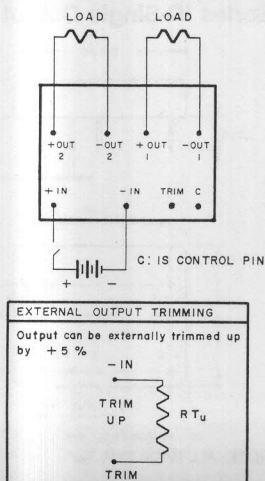
No minimum. Net 30 days F.O.B. Mt. Vernon, New York.

Each unit is supplied with an external control pin. This "C" pin, when connected to the negative (-) input, will disable the unit, allowing for remote shutdown.

#### Series PLR-Dual Output



Typical Weight: 40 Grams



For immediate engineering assistance or to place an order—

Call Toll Free 800-431-1064

## PICO Electronics, Inc.

453 N. MacQuesten Pkwy.  
Mt. Vernon, N.Y. 10552

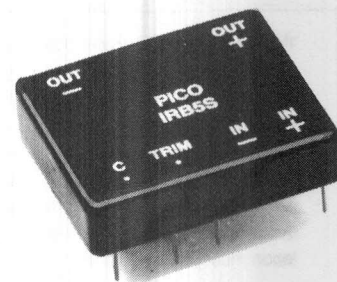
914-699-5514 • FAX 914-699-5565

Delivery—  
stock to one week

# SERIES IR

## Isolated Regulated up to 10 Watt DC-DC Converters Wide Input Range/up to 3.33:1 Fully Regulated All Units Shielded

**New 100 VDC  
Output Models**



### FEATURES:

- Voltage regulation over input of  

	LOW	HIGH
IRE	5V	15V
IRF	8V	24V
IRA	18V	36V
IRB	36V	60V
IRC	18V	60V
- Encapsulated semiconductors, conservatively rated for maximum reliability.
- Load regulation (see table for typical variation at different loads)
- Line regulation = Typical values  

5-15 V DC	= ± 1.5%
8-24 V DC	= ± 1.5%
18-36 V DC	= ± 1.0%
36-60 V DC	= ± 1.0%
18-60 V DC	= ± 1.5%
- High efficiency—up to 84%
- Will operate over a temperature range of -25°C to +70°C with no heat sink or electrical derating
- 6 sided shielding
- Isolation—100 megohms at 500 volts DC
- External output trimming pin standard, +5%
- Single and dual isolated outputs.
- Each unit is supplied with an external control pin. This "C" pin, when connected to the negative (-) input, will disable the unit, allowing for remote shutdown.

### OPTIONS AVAILABLE

- Expanded operating temp. (-55°C to +85°C)
- Stabilization Bake (125°C ambient)
- Temperature Cycle (-55°C to +125°C)
- Hi Temp, full power burn in (100% power, 125°C case temp)

**Low Profile  
Less Than  
0.5" Height**

### SERIES IR - SINGLE OUTPUT

PICO PART NUMBER	INPUT VOLTAGE RANGE	OUTPUT VOLTAGE (V DC)	MAX. LOAD CURRENT (mA)	MAX. OUTPUT POWER (watts)	EFF. @ FULL LOAD TYPICAL (%)	INPUT CURRENT FULL LOAD TYPICAL (mA)	OUT VOLT RIPPLE @ FULL LD. 1-1 MHz BW mv p-p	OUT VOLT TOLERANCE (±%)	VLD. REG. 25%-100% LOAD (±%)	LINE REGULATION (±%)	PRICE 1-24
IRE5S	5-15	5	1200	6	80	750	175	0.75	2.00	2.00	128.40
IRE9S	5-15	9	889	8	80	1000	150	0.50	1.50	1.00	128.40
IRE12S	5-15	12	667	8	78	1025	150	0.50	1.50	1.00	128.40
IRE15S	5-15	15	533	8	78	1025	150	0.50	1.50	1.00	128.40
IRE24S	5-15	24	333	8	82	975	150	0.50	0.75	1.00	128.40
IRE28S	5-15	28	286	8	83	965	200	0.50	0.50	0.50	128.40
IRE48S	5-15	48	167	8	83	965	250	0.50	0.50	0.50	128.40
IRE100S	5-15	100	60	6	80	750	300	0.50	0.50	0.75	160.50
IRF5S	8-24	5	2000	10	80	780	200	0.75	1.50	1.75	128.40
IRF9S	8-24	9	1111	10	81	770	150	0.50	0.75	1.25	128.40
IRF12S	8-24	12	833	10	78	800	150	0.50	0.75	0.75	128.40
IRF15S	8-24	15	667	10	78	800	150	0.50	0.75	0.75	128.40
IRF24S	8-24	24	417	10	83	755	150	0.50	0.75	0.75	128.40
IRF28S	8-24	28	357	10	83	755	200	0.50	0.50	0.50	128.40
IRF48S	8-24	48	208	10	84	745	250	0.50	0.50	0.50	128.40
IRF100S	8-24	100	100	10	80	780	300	0.50	0.50	0.75	160.50
IRA5S	18-36	5	2000	10	81	455	125	0.75	1.25	0.75	128.40
IRA9S	18-36	9	1111	10	83	445	100	0.50	1.00	0.50	128.40
IRA12S	18-36	12	833	10	78	475	75	0.50	1.00	0.25	128.40
IRA15S	18-36	15	667	10	78	475	75	0.50	0.75	0.25	128.40
IRA24S	18-36	24	417	10	83	445	75	0.50	0.75	0.25	128.40
IRA28S	18-36	28	357	10	83	445	100	0.50	0.75	0.25	128.40
IRA48S	18-36	48	208	10	84	440	150	0.50	0.50	0.25	128.40
IRA100S	18-36	100	100	10	81	455	250	0.50	0.50	0.50	160.50
IRB5S	36-60	5	2000	10	81	255	125	0.75	1.25	0.50	149.80
IRB9S	36-60	9	1111	10	83	250	100	0.50	0.75	0.50	149.80
IRB12S	36-60	12	833	10	83	250	75	0.50	0.75	0.25	149.80
IRB15S	36-60	15	667	10	83	250	75	0.50	0.75	0.25	149.80
IRB24S	36-60	24	417	10	83	250	75	0.50	0.75	0.25	149.80
IRB28S	36-60	28	357	10	83	250	100	0.50	0.50	0.25	149.80
IRB48S	36-60	48	208	10	84	250	150	0.50	0.50	0.25	149.80
IRB100S	36-60	100	100	10	81	255	250	0.50	0.50	0.50	187.25
IRC5S	18-60	5	2000	10	81	320	125	0.75	1.25	1.00	160.50
IRC9S	18-60	9	1111	10	83	310	100	0.50	0.75	0.75	160.50
IRC12S	18-60	12	833	10	83	310	75	0.50	0.75	0.50	160.50
IRC15S	18-60	15	667	10	83	310	75	0.50	0.75	0.50	160.50
IRC24S	18-60	24	417	10	83	310	75	0.50	0.75	0.50	160.50
IRC28S	18-60	28	357	10	83	310	100	0.50	0.50	0.50	160.50
IRC48S	18-60	48	208	10	84	305	150	0.50	0.50	0.50	160.50
IRC100S	18-60	100	100	10	81	310	250	0.50	0.50	0.75	200.63

\*Measurements taken with input voltage set at mid value.

Ordering Instructions: No minimum. Net 30 days F.O.B. Mt. Vernon, New York.

‡ 10% minimum load required.

For immediate engineering assistance  
or to place an order—

Call Toll Free 800-431-1064

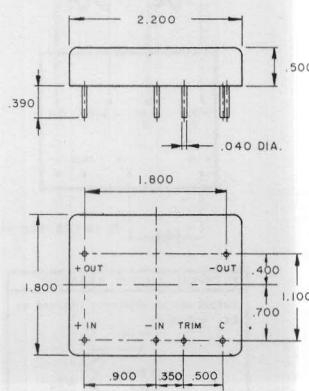
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Mt. Vernon, N.Y. 10552

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**Delivery—  
stock to one week**

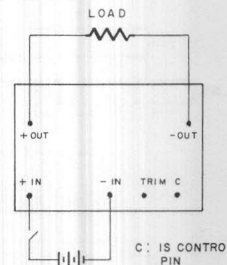
### Series IR-Single Output



C: IS CONTROL PIN  
NOTE: ALL RADII TYP. 7/64"

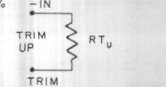
BOTTOM VIEW

Each unit is supplied with an external control pin. This "C" pin, when connected to the negative (-) input, will disable the unit, allowing for remote shutdown.



### EXTERNAL OUTPUT TRIMMING

Output can be externally trimmed up by +5%



Typical Weight: 95 Grams



This series of high efficiency, wide input range, encapsulated regulators come in 75 different models. These units feature a 500 VOLT DC input to output isolation in both single and dual output models. The IR Series will operate over a temperature range of -25°C TO +70°C with no heat sink or electrical derating. These units are excellent for applications where input voltage varies dramatically, yet a high efficiency and output voltage regulation must be maintained.

#### TYPICAL CHARACTERISTICS:

Test conditions: 25°C ambient

Operating temperature: -25° C to +70° C ambient

Output voltage tolerance:  $\pm 1\%$  at typical input voltage

Output voltage temperature coefficient: 0.02%/°C

Storage temperature: -55°C to 125°C

Short circuit protection: Temporary

Operating frequency: 40 Khtz, typ.

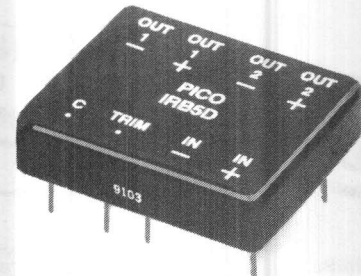
### SERIES IR - DUAL OUTPUT

PICO PART NUMBER	INPUT VOLTAGE RANGE	OUTPUT VOLTAGE DC PER OUTPUT	MAX. LOAD CURRENT mA PER OUTPUT	MAX OUTPUT POWER (watts) PER OUTPUT	EFF. @ FULL LOAD TYPICAL (%)*	INPUT CURRENT FULL LOAD TYPICAL (mA)*	OUT VOLT RIPPLE @ FULL LD. 1-1 MHz BW mv p-p	OUT VOLT TOLERANCE ( $\pm$ %)*	VLD. REG. 25%-100% LOAD $\ddagger$ ( $\pm$ %)*	LINE REGULATION ( $\pm$ %)*	PRICE 1-24
IRE5D	5-15	5	600	3	80	750	175	0.75	2.00	2.00	155.15
IRE9D	5-15	9	444	4	80	1000	150	0.50	1.50	1.00	155.15
IRE12D	5-15	12	333	4	78	1025	150	0.50	1.50	1.00	155.15
IRE15D	5-15	15	267	4	78	1025	150	0.50	1.50	1.00	155.15
IRE24D	5-15	24	167	4	82	975	150	0.50	0.75	1.00	155.15
IRE28D	5-15	28	143	4	83	965	200	0.50	0.50	0.50	155.15
IRE48D	5-15	48	83	4	83	965	250	0.50	0.50	0.50	155.15
IRF5D	8-24	5	1000	5	80	780	200	0.75	1.50	1.75	155.15
IRF9D	8-24	9	556	5	81	770	150	0.50	0.75	1.25	155.15
IRF12D	8-24	12	417	5	78	800	150	0.50	0.75	0.75	155.15
IRF15D	8-24	15	333	5	78	800	150	0.50	0.75	0.75	155.15
IRF24D	8-24	24	208	5	83	755	150	0.50	0.75	0.75	155.15
IRF28D	8-24	28	179	5	83	755	200	0.50	0.50	0.50	155.15
IRF48D	8-24	48	104	5	84	745	250	0.50	0.50	0.50	155.15
IRA5D	18-36	5	1000	5	81	455	125	0.75	1.25	0.75	155.15
IRA9D	18-36	9	556	5	83	445	100	0.50	1.00	0.50	155.15
IRA12D	18-36	12	417	5	78	475	75	0.50	1.00	0.25	155.15
IRA15D	18-36	15	333	5	78	475	75	0.50	0.75	0.25	155.15
IRA24D	18-36	24	208	5	83	445	75	0.50	0.75	0.25	155.15
IRA28D	18-36	28	179	5	83	445	100	0.50	0.75	0.25	155.15
IRA48D	18-36	48	104	5	84	440	150	0.50	0.50	0.25	155.15
IRB5D	36-60	5	1000	5	81	255	125	0.75	1.25	0.50	176.55
IRB9D	36-60	9	556	5	83	250	100	0.50	0.75	0.50	176.55
IRB12D	36-60	12	417	5	83	250	75	0.50	0.75	0.25	176.55
IRB15D	36-60	15	333	5	83	250	75	0.50	0.75	0.25	176.55
IRB24D	36-60	24	208	5	83	250	75	0.50	0.75	0.25	176.55
IRB28D	36-60	28	179	5	83	250	100	0.50	0.50	0.25	176.55
IRB48D	36-60	48	104	5	84	250	150	0.50	0.50	0.25	176.55
IRC5D	18-60	5	1000	5	81	320	125	0.75	1.25	1.00	187.25
IRC9D	18-60	9	556	5	83	310	100	0.50	0.75	0.75	187.25
IRC12D	18-60	12	417	5	83	310	75	0.50	0.75	0.50	187.25
IRC15D	18-60	15	333	5	83	310	75	0.50	0.75	0.50	187.25
IRC24D	18-60	24	208	5	83	310	75	0.50	0.75	0.50	187.25
IRC28D	18-60	28	179	5	83	310	100	0.50	0.50	0.50	187.25
IRC48D	18-60	48	104	5	84	305	150	0.50	0.50	0.50	187.25

\*Measurements taken with input voltage set at mid value.

$\ddagger$  10% minimum load required.

Ordering Instructions: No minimum. Net 30 days F.O.B. Mt. Vernon, New York.

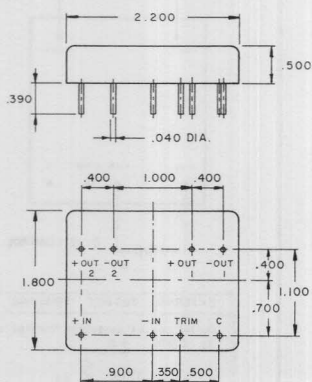


**No Heat Sink  
or Electrical  
Derating Required**

**OPTIONS AVAILABLE**  
 • Expanded operating temp.  
 (-55°C to +85°C)  
 • Stabilization Bake  
 (125°C ambient)  
 • Temperature Cycle  
 (-55°C to +125°C)  
 • Hi Temp, full power burn  
 in (100% power,  
 125°C case temp)

**Low Profile  
Less Than  
0.5" Height**

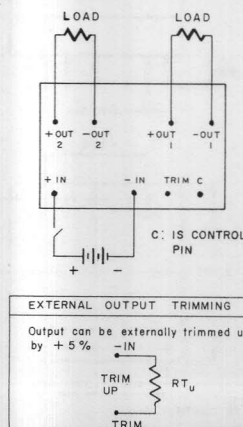
#### Series IR-Dual Output



NOTE: ALL RADII TYP.  $\frac{1}{64}$ "

BOTTOM VIEW

Each unit is supplied with an external control pin. This "C" pin, when connected to the negative (-) input, will disable the unit, allowing for remote shutdown.



Typical Weight: 95 Grams

For immediate engineering assistance  
or to place an order—

Call Toll Free 800-431-1064

**PICO  
Electronics, Inc.**

453 N. MacQuesten Pkwy.  
Mt. Vernon, N.Y. 10552

914-699-5514 • FAX 914-699-5565

**Delivery—  
stock to one week**

# SERIES JR

## Isolated Regulated 15 Watt

## DC-DC Converters

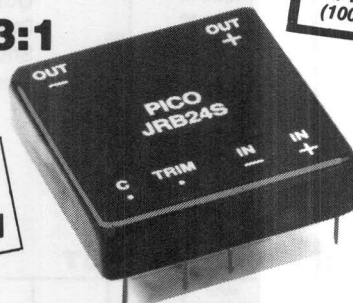
## Wide Input Range/up to 3.33:1

## Fully Regulated

## All Units Shielded

**New 100 VDC  
Output Models**

**No Heat Sink  
or Electrical  
Derating Required**



**OPTIONS AVAILABLE**

- Expanded operating temp (-55°C to +85°C)
- Stabilization Bake (125°C ambient)
- Temperature Cycle (-55°C to +125°C)
- Hi Temp, full power burn in (100% power, 125°C case temp)

**Low Profile  
Less Than  
0.5" Height**

### SERIES JR - SINGLE OUTPUT

#### FEATURES:

- Voltage regulation over input of
  - LOW HI
  - JRA 18V 36V
  - JRB 36V 60V
  - JRC 18V 60V
- Encapsulated semi-conductors, conservatively rated for maximum reliability.
- Load regulation (see table for typical variation at different loads)
- Line regulation =
  - Typical values
  - 18-36V DC =  $\pm 1.0\%$
  - 36-60V DC =  $\pm 1.0\%$
  - 18-60V DC =  $\pm 2.0\%$
- High efficiency—up to 84%
- Will operate over a temperature range of -25°C to +70°C with no heat sink or electrical derating
- 6 sided shielding
- Isolation—100 megohms at 500 Volts DC
- External output trimming pin standard, +5%
- Single and dual isolated outputs
- Each unit is supplied with an external control pin. This "C" pin, when connected to the negative (-) input, will disable the unit, allowing for remote shutdown.

PICO PART NUMBER	INPUT VOLTAGE RANGE	OUTPUT VOLTAGE DC	MAX. LOAD CURRENT mA	MAX. OUTPUT POWER (watts)	EFF. @ FULL LOAD TYPICAL (%)	INPUT CURRENT FULL LOAD TYPICAL (mA)	OUT VOLT RIPPLE @ FULL LD. 1-1 MHz BW mv p-p	OUT VOLT TOLERANCE (%)	VLD. REG. 25%-100% LOAD*	LINE REGULATION (%)	PRICE 1-24
JRA5S	18-36	5	3000	15	78	710	50	0.75	2.00	1.50	154.08
JRA9S	18-36	9	1667	15	78	710	40	0.50	1.50	0.50	154.08
JRA12S	18-36	12	1250	15	78	710	40	0.50	1.00	0.50	154.08
JRA15S	18-36	15	1000	15	78	710	40	0.50	1.00	0.50	154.08
JRA24S	18-36	24	625	15	83	670	40	0.50	1.00	0.25	154.08
JRA28S	18-36	28	536	15	84	660	40	0.75	0.50	0.25	154.08
JRA48S	18-36	48	313	15	84	660	50	0.75	0.50	0.25	154.08
JRA100S	18-36	100	150	15	84	660	75	0.50	0.75	0.25	192.60
JRB5S	36-60	5	3000	15	78	400	50	0.75	2.00	0.75	179.76
JRB9S	36-60	9	1667	15	78	400	40	0.50	1.50	0.50	179.76
JRB12S	36-60	12	1250	15	80	390	40	0.50	1.00	0.50	179.76
JRB15S	36-60	15	1000	15	81	385	40	0.50	1.00	0.50	179.76
JRB24S	36-60	24	625	15	83	375	40	0.50	1.00	0.25	179.76
JRB28S	36-60	28	536	15	84	370	40	0.50	0.50	0.25	179.76
JRB48S	36-60	48	313	15	84	370	50	0.50	0.50	0.25	179.76
JRB100S	36-60	100	150	15	84	370	75	0.50	0.50	0.25	224.70
JRC5S	18-60	5	3000	15	78	495	50	0.75	2.00	1.50	192.60
JRC9S	18-60	9	1667	15	78	495	40	0.50	1.50	0.75	192.60
JRC12S	18-60	12	1250	15	80	480	40	0.50	1.00	0.75	192.60
JRC15S	18-60	15	1000	15	81	475	40	0.50	1.00	0.75	192.60
JRC24S	18-60	24	625	15	83	465	40	0.50	1.00	0.50	192.60
JRC28S	18-60	28	536	15	84	460	40	0.50	0.50	0.50	192.60
JRC48S	18-60	48	313	15	84	460	50	0.50	0.50	0.50	192.60
JRC100S	18-60	100	150	15	84	460	75	0.50	0.50	0.50	240.75

\*Measurements taken with input voltage set at mid value.

Ordering Instructions: No minimum. Net 30 days F.O.B. Mt. Vernon, New York.

\* 10% minimum load required.

For immediate engineering assistance  
or to place an order—

Call Toll Free 800-431-1064

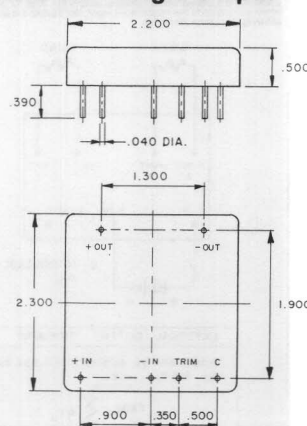
# PICO Electronics, Inc.

453 N. MacQuesten Pkwy.  
Mt. Vernon, N.Y. 10552

914-699-5514 • FAX 914-699-5565

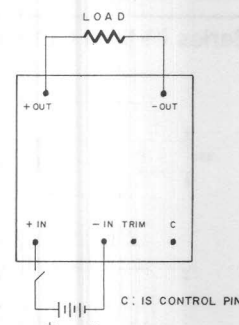
**Delivery—  
stock to one week**

### Series JR - Single Output

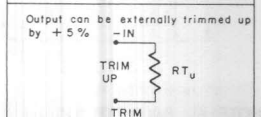


C: IS CONTROL PIN  
NOTE: ALL RADII TO BE 7/64"  
BOTTOM VIEW

Typical Weight: 115 Grams



#### EXTERNAL OUTPUT TRIMMING



Each unit is supplied with an external control pin. This "C" pin, when connected to the negative (-) input, will disable the unit, allowing for remote shutdown.



This series of high efficiency, wide input range, encapsulated regulators come in 45 different models. These units feature a 500 Volt DC input to output isolation in both single and dual output models. The JR Series will operate over a temperature range of -25°C to +70°C with no heat sink or electrical derating. These units are excellent for applications where input voltage varies dramatically, yet a high efficiency and output voltage regulation must be maintained.

- OPTIONS AVAILABLE**
- Expanded operating temp (-55°C to +85°C)
  - Stabilization Bake (125°C ambient)
  - Temperature Cycle (-55°C to +125°C)
  - Hi Temp, full power burn in (100% power, 125°C case temp)

**No Heat Sink  
or Electrical  
Derating Required**

#### TYPICAL CHARACTERISTICS:

Test conditions: 25°C ambient

Operating temperature: -25°C to +70°C ambient

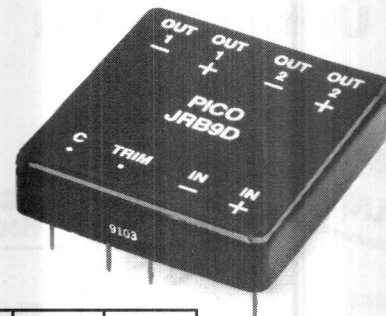
Output voltage tolerance: ±2% at typical input voltage

Output voltage temperature coefficient: 0.02%/°C

Storage temperature: -55°C to +125°C

Short circuit protection: Temporary

Operating frequency: 40 Khtz, typ.



#### SERIES JR - DUAL OUTPUT

PICO PART NUMBER	INPUT VOLTAGE RANGE	OUTPUT VOLTAGE DC PER OUTPUT	MAX. LOAD CURRENT mA PER OUTPUT	MAX. OUTPUT POWER (watts) PER OUTPUT	EFF. @ FULL LOAD TYPICAL (%)	INPUT CURRENT FULL LOAD TYPICAL (mA)	OUT VOLT RIPPLE @ FULL LD. 1-1 MHz BW mv p-p	OUT VOLT TOLERANCE (±%)	V LD. REG. 25%-100% LOAD (±%)	LINE REGULATION (±%)	PRICE 1-24
JRA5D	18-36	5	1500	7.5	78	710	50	0.75	2.00	1.50	180.83
JRA9D	18-36	9	833	7.5	78	710	40	0.50	1.50	0.50	180.83
JRA12D	18-36	12	625	7.5	78	710	40	0.50	1.00	0.50	180.83
JRA15D	18-36	15	500	7.5	78	710	40	0.50	1.00	0.50	180.83
JRA24D	18-36	24	313	7.5	83	670	40	0.50	1.00	0.25	180.83
JRA28D	18-36	28	268	7.5	84	660	40	0.75	0.75	0.25	180.83
JRA48D	18-36	48	156	7.5	84	660	50	0.75	0.75	0.25	180.83
JRB5D	36-60	5	1500	7.5	78	400	50	0.75	2.00	0.75	206.51
JRB9D	36-60	9	833	7.5	78	400	40	0.50	1.50	0.50	206.51
JRB12D	36-60	12	625	7.5	80	390	40	0.50	1.00	0.50	206.51
JRB15D	36-60	15	500	7.5	81	385	40	0.50	1.00	0.50	206.51
JRB24D	36-60	24	313	7.5	83	375	40	0.50	1.00	0.25	206.51
JRB28D	36-60	28	268	7.5	84	370	40	0.50	0.50	0.25	206.51
JRB48D	36-60	48	156	7.5	84	370	50	0.50	0.50	0.25	206.51
JRC5D	18-60	5	1500	7.5	78	495	50	0.75	2.00	1.50	219.35
JRC9D	18-60	9	833	7.5	78	495	40	0.50	1.50	0.75	219.35
JRC12D	18-60	12	625	7.5	80	480	40	0.50	1.00	0.75	219.35
JRC15D	18-60	15	500	7.5	81	475	40	0.50	1.00	0.75	219.35
JRC24D	18-60	24	313	7.5	83	465	40	0.50	1.00	0.50	219.35
JRC28D	18-60	28	268	7.5	84	460	40	0.50	0.50	0.50	219.35
JRC48D	18-60	48	156	7.5	84	460	50	0.50	0.50	0.50	219.35

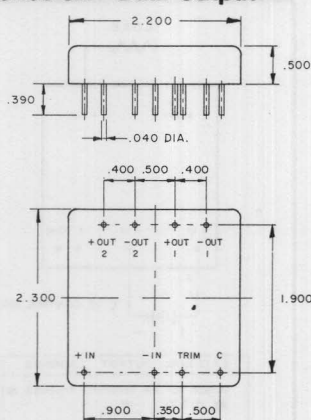
**Low Profile  
Less Than  
0.5" Height**

\*Measurements taken with input voltage set at mid value.

‡ 10% minimum load required.

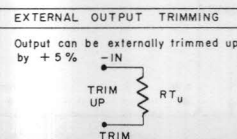
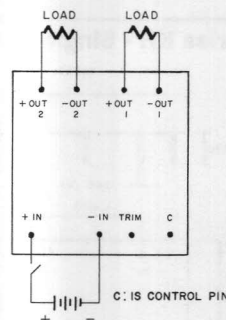
Ordering Instructions: No minimum. Net 30 days F.O.B. Mt. Vernon, New York.

#### Series JR - Dual Output



C: IS CONTROL PIN  
NOTE: ALL RADII TO BE 7/64"  
BOTTOM VIEW

Typical Weight: 115 Grams



Each unit is supplied with an external control pin. This "C" pin, when connected to the negative (-) input, will disable the unit, allowing for remote shutdown.

For immediate engineering assistance  
or to place an order—

Call Toll Free 800-431-1064

**PICO  
Electronics, Inc.**

453 N. MacQuesten Pkwy.  
Mt. Vernon, N.Y. 10552

914-699-5514 • FAX 914-699-5565

**Delivery—  
stock to one week**

# SERIES KR

**Isolated Regulated 20 Watt  
DC-DC Converters  
Wide Input Range/up to 3.33:1  
Fully Regulated  
All Units Shielded**

**New 100 VDC  
Output Models**



**OPTIONS AVAILABLE**  
• Expanded operating temp (-55°C to +85°C)  
• Stabilization Bake (125°C ambient)  
• Temperature Cycle (-55°C to +125°C)  
• Hi Temp, full power burn in (100% power, 125°C case temp)

**Low Profile  
Less Than  
0.5" Height**

## SERIES KR SINGLE OUTPUT

### FEATURES

- Voltage regulation over input of
 

	LOW	HI
KRA	18V	36V
KRB	36V	60V
KRC	18V	60V
- Encapsulated semi-conductors, conservatively rated for maximum reliability.
- Load regulation (see table for typical variation at different loads)
- Line regulation =
 

Typical values
18-36V DC = $\pm 1.5\%$
36-60V DC = $\pm 1.5\%$
18-60V DC = $\pm 3.0\%$
- High efficiency—up to 84%
- Will operate over a temperature range of -25°C to +70°C with no heat sink or electrical derating
- 6 sided shielding
- Isolation—100 megohms at 500 Volts DC
- External output trimming pin standard,  $\pm 5\%$
- Single and dual isolated outputs
- Each unit is supplied with an external control pin. This "C" pin, when connected to the negative (-) input, will disable the unit, allowing for remote shutdown.

PICO PART NUMBER	INPUT VOLTAGE RANGE	OUTPUT VOLTAGE DC	MAX. LOAD CURRENT mA	MAX. OUTPUT POWER (watts)	EFF. @ FULL LOAD TYPICAL (%)	INPUT CURRENT FULL LOAD TYPICAL (mA)	OUT VOLT RIPPLE @ FULL LD. 1-1 MHz BW mv p-p	OUT VOLT TOLERANCE (%)	VLD. REG. 25%-100% LOAD $\pm$ (%)	LINE REGULATION (%)	PRICE 1-24
KRA5S	18-36	5	4000	20	78	950	60	0.75	2.50	1.50	185.11
KRA9S	18-36	9	2222	20	80	925	60	0.50	1.25	0.75	185.11
KRA12S	18-36	12	1667	20	78	950	60	0.50	1.00	0.50	185.11
KRA15S	18-36	15	1333	20	78	950	60	0.50	1.00	0.50	185.11
KRA24S	18-36	24	833	20	81	915	60	0.50	0.50	0.25	185.11
KRA28S	18-36	28	714	20	82	905	60	0.50	0.50	0.25	185.11
KRA48S	18-36	48	417	20	83	890	80	0.50	0.50	0.25	185.11
KRA100S	18-36	100	200	20	83	890	100	0.50	0.50	0.25	231.39
KRB5S	36-60	5	4000	20	78	535	60	0.75	2.50	1.00	216.14
KRB9S	36-60	9	2222	20	80	520	60	0.50	1.25	0.50	216.14
KRB12S	36-60	12	1667	20	78	535	60	0.50	1.00	0.50	216.14
KRB15S	36-60	15	1333	20	78	535	60	0.50	1.00	0.50	216.14
KRB24S	36-60	24	833	20	81	515	60	0.50	0.50	0.25	216.14
KRB28S	36-60	28	714	20	82	510	60	0.50	0.50	0.25	216.14
KRB48S	36-60	48	417	20	83	500	80	0.50	0.50	0.25	216.14
KRB100S	36-60	100	200	20	83	500	100	0.50	0.50	0.25	270.18
KRC5S	18-60	5	4000	20	78	660	60	0.75	2.50	2.00	231.12
KRC9S	18-60	9	2222	20	80	640	60	0.50	1.25	1.00	231.12
KRC12S	18-60	12	1667	20	78	660	60	0.50	1.00	0.75	231.12
KRC15S	18-60	15	1333	20	78	660	60	0.50	1.00	0.75	231.12
KRC24S	18-60	24	833	20	81	635	60	0.50	0.50	0.50	231.12
KRC28S	18-60	28	714	20	82	625	60	0.50	0.50	0.50	231.12
KRC48S	18-60	48	417	20	83	615	80	0.50	0.50	0.50	231.12
KRC100S	18-60	100	200	20	83	615	100	0.50	0.50	0.50	288.50

\*Measurements taken with input voltage set at mid value.  
Ordering Instructions: No minimum. Net 30 days F.O.B. Mt. Vernon, New York.

$\pm 10\%$  minimum load required.

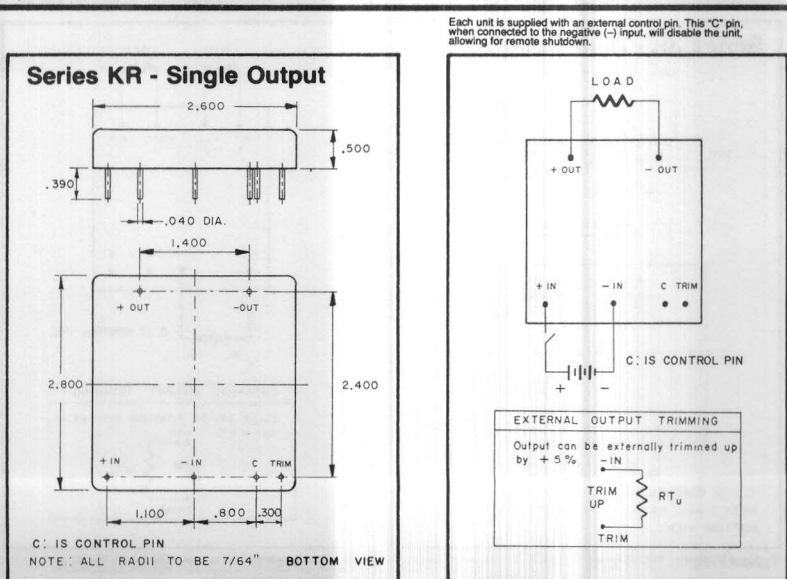
For immediate engineering assistance  
or to place an order—  
**Call Toll Free 800-431-1064**

**PICO  
Electronics, Inc.**

453 N. MacQuesten Pkwy.  
Mt. Vernon, N.Y. 10552

914-699-5514 • FAX 914-699-5565

**Delivery—  
stock to one week**



Typical Weight: 165 Grams



This series of high efficiency, wide input range, encapsulated regulators come in 45 different models. These units feature a 500 Volt DC input to output isolation in both single and dual output models. The KR Series will operate over a temperature range of -25°C to +70°C with no heat sink or electrical derating. These units are excellent for applications where input voltage varies dramatically, yet a high efficiency and output voltage regulation must be maintained.

#### OPTIONS AVAILABLE

- Expanded operating temp (-55°C to +85°C)
- Stabilization Bake (125°C ambient)
- Temperature Cycle (-55°C to +125°C)
- Hi Temp, full power burn in (100% power, 125°C case temp)

**No Heat Sink  
or Electrical  
Derating Required**

#### TYPICAL CHARACTERISTICS:

Test conditions: 25°C ambient

Operating temperature: -25°C to +70°C ambient

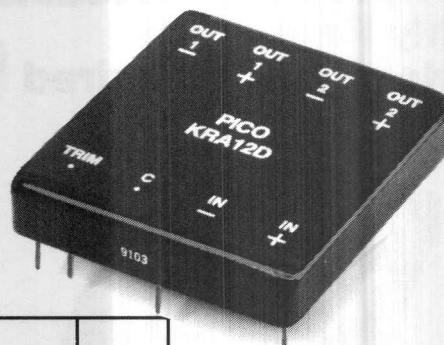
Output voltage tolerance: ±3% at typical input voltage

Output voltage temperature coefficient: 0.02%/°C

Storage temperature: -55°C to +125°C

Short circuit protection: Temporary

Operating frequency: 40 Khtz, typ.



#### SERIES KR - DUAL OUTPUT

PICO PART NUMBER	INPUT VOLTAGE RANGE	OUTPUT VOLTAGE DC PER OUTPUT	MAX. LOAD CURRENT mA PER OUTPUT	MAX. OUTPUT POWER (watts) PER OUTPUT	EFF. @ FULL LOAD TYPICAL (%)	INPUT CURRENT FULL LOAD TYPICAL (mA)	OUT VOLT RIPPLE @ FULL L.D. 1-1 MHz BW mv p-p	OUT VOLT TOLERANCE (±%)	V L.D. REG. 25%-100% LOAD† (±%)	LINE REGULATION (±%)	PRICE 1-24
KRA5D	18-36	5	2000	10	78	950	60	0.75	2.50	1.50	211.86
KRA9D	18-36	9	1111	10	80	925	60	0.50	1.25	0.75	211.86
KRA12D	18-36	12	833	10	78	950	60	0.50	1.00	0.50	211.86
KRA15D	18-36	15	667	10	78	950	60	0.50	1.00	0.50	211.86
KRA24D	18-36	24	417	10	81	915	60	0.50	0.50	0.25	211.86
KRA28D	18-36	28	357	10	82	905	60	0.50	0.50	0.25	211.86
KRA48D	18-36	48	208	10	83	890	80	0.50	0.50	0.25	211.86
KRB5D	36-60	5	2000	10	78	535	60	0.75	2.50	1.00	242.89
KRB9D	36-60	9	1111	10	80	520	60	0.50	1.25	0.50	242.89
KRB12D	36-60	12	833	10	78	535	60	0.50	1.00	0.50	242.89
KRB15D	36-60	15	667	10	78	535	60	0.50	1.00	0.50	242.89
KRB24D	36-60	24	417	10	81	515	60	0.50	0.50	0.25	242.89
KRB28D	36-60	28	357	10	82	510	60	0.50	0.50	0.25	242.89
KRB48D	36-60	48	208	10	83	500	80	0.50	0.50	0.25	242.89
KRC5D	18-60	5	2000	10	78	660	60	0.75	2.50	2.00	257.87
KRC9D	18-60	9	1111	10	80	640	60	0.50	1.25	1.00	257.87
KRC12D	18-60	12	833	10	78	660	60	0.50	1.00	0.75	257.87
KRC15D	18-60	15	667	10	78	660	60	0.50	1.00	0.75	257.87
KRC24D	18-60	24	417	10	81	635	60	0.50	0.50	0.50	257.87
KRC28D	18-60	28	357	10	82	625	60	0.50	0.50	0.50	257.87
KRC48D	18-60	48	208	10	83	615	80	0.50	0.50	0.50	257.87

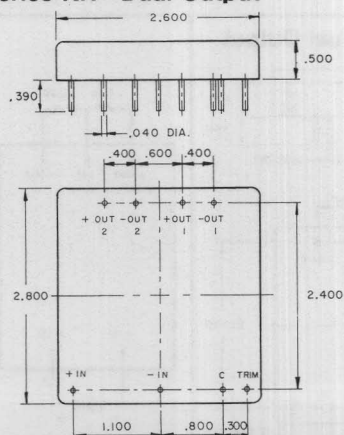
**Low Profile  
Less Than  
0.5" Height**

\*Measurements taken with input voltage set at mid value.

† 10% minimum load required.

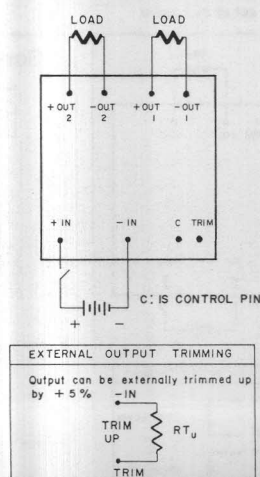
Ordering Instructions: No minimum. Net 30 days F.O.B. Mt. Vernon, New York.

#### Series KR - Dual Output



C: IS CONTROL PIN  
NOTE: ALL RADII TO BE 7/64" BOTTOM VIEW

Each unit is supplied with an external control pin. This "C" pin, when connected to the negative (-) input, will disable the unit, allowing for remote shutdown.



EXTERNAL OUTPUT TRIMMING  
Output can be externally trimmed up by +5%  
TRIM UP  
RT<sub>U</sub>  
TRIM

Typical Weight: 165 Grams

For immediate engineering assistance  
or to place an order—

Call Toll Free 800-431-1064

**PICO  
Electronics, Inc.**

453 N. MacQuesten Pkwy.  
Mt. Vernon, N.Y. 10552

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**Delivery—  
stock to one week**

# SERIES NR

## Isolated Regulated up to 30 Watt DC-DC Converters

Wide Input Range/up to 72V DC

30 Triple Output Models

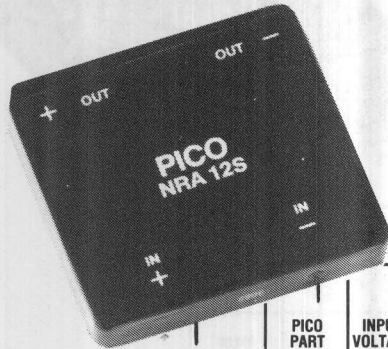
Highly Regulated

No Heat Sink Required

No Heat Sink  
or Electrical  
Derating Required

Low Profile  
Less Than  
0.5" Height

- 30 Triple Output Models
- 72 V Input Voltage
- 0.2% Line Regulation
- Continuous Short Circuit Protection



### SERIES NR—SINGLE OUTPUT

PICO PART NUMBER	INPUT VOLTAGE RANGE	OUTPUT VOLTAGE DC	MAX. LOAD CURRENT mA	MAX. OUTPUT POWER (watts)	EFF. @ FULL LOAD TYPICAL (%)	INPUT CURRENT FULL LOAD TYPICAL (mA)	OUT VOLT RIPPLE @ FULL LD. 1-1 MHz BW mv p-p	OUT VOLT TOLERANCE (±%)	V LD. REG. 10%-100% LOAD (±%)	LINE REGULATION (±%)	PRICE 1-24
NRA5S	18-36	5	4000	20	78	1068	50	0.5	0.3	0.2	260.00
NRA9S	18-36	9	2777	25	80	1302	50	0.5	0.2	0.2	260.00
NRA12S	18-36	12	2083	25	81	1286	50	0.5	0.2	0.2	260.00
NRA15S	18-36	15	1666	25	83	1255	50	0.5	0.2	0.2	260.00
NRA24S	18-36	24	1042	25	84	1240	50	0.5	0.2	0.2	260.00
NRA28S	18-36	28	893	25	85	1225	50	0.5	0.2	0.2	260.00
NRB5S	36-72	5	4400	22	78	588	50	0.5	0.3	0.2	289.00
NRB9S	36-72	9	2777	25	83	628	50	0.5	0.2	0.2	289.00
NRB12S	36-72	12	2083	25	83	628	50	0.5	0.2	0.2	289.00
NRB15S	36-72	15	2000	30	85	735	50	0.5	0.2	0.2	289.00
NRB24S	36-72	24	1250	30	86	727	50	0.5	0.2	0.2	289.00
NRB28S	36-72	28	1071	30	87	718	50	0.5	0.2	0.2	289.00

‡ 10% minimum load required.

#### FEATURES:

- 30 triple output models
- Voltage regulation over input of LOW HI  
NRA 18V 36V  
NRB 36V 72V
- Encapsulated semiconductors, conservatively rated for maximum reliability.
- Load regulation (see table for typical variation at different loads
- Line regulation = Typical values  
18-36V DC = 0.2%  
36-72V DC = 0.2%
- High efficiency—up to 87
- Will operate over a ambient temperature range of -25°C to +70°C with no heat sink or electrical derating required.
- Short circuit protection
- Current limited
- 6 sided shielding
- Isolation—100 megohms at 500 Volts DC
- Screw inserts for mounting

### SERIES NR—DUAL OUTPUT

PICO PART NUMBER	INPUT VOLTAGE RANGE	OUTPUT VOLTAGE DC PER OUTPUT	MAX. LOAD CURRENT mA PER OUTPUT	MAX. OUTPUT POWER (watts) PER OUTPUT	EFF. @ FULL LOAD TYPICAL (%)	INPUT CURRENT FULL LOAD TYPICAL (mA)	OUT VOLT RIPPLE @ FULL LD. 1-1 MHz BW mv p-p	OUT VOLT TOLERANCE (±%)	V LD. REG. 25%-100% LOAD (±%)	LINE REGULATION (±%)	PRICE 1-24
NRA5D	18-36	± 5	2000	10.0	78	1068	50	0.5	0.3	0.2	310.00
NRA9D	18-36	± 9	1390	12.5	80	1302	50	0.5	0.2	0.2	310.00
NRA12D	18-36	± 12	1042	12.5	81	1286	50	0.5	0.2	0.2	310.00
NRA15D	18-36	± 15	833	12.5	83	1255	50	0.5	0.2	0.2	310.00
NRB5D	36-72	± 5	2200	11.0	78	588	50	0.5	0.3	0.2	339.00
NRB9D	36-72	± 9	1390	12.5	80	651	50	0.5	0.2	0.2	339.00
NRB12D	36-72	± 12	1042	12.5	82	635	50	0.5	0.2	0.2	339.00
NRB15D	36-72	± 15	833	12.5	84	620	50	0.5	0.2	0.2	339.00

‡ 10% minimum load required.

\*Measurements taken with input voltage set at mid value.

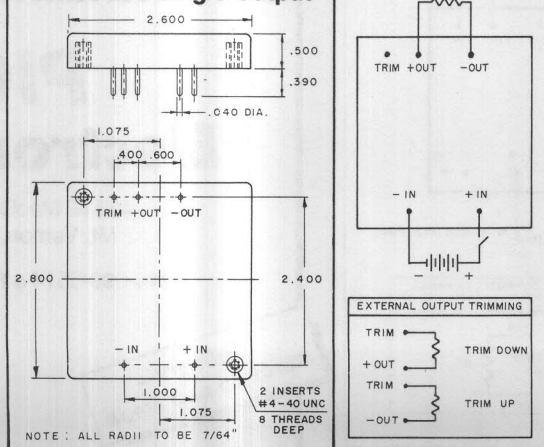
Delivery—  
stock to one week

**PICO  
Electronics,  
Inc.**

453 N. MacQuesten Pkwy.  
Mt. Vernon, N.Y. 10552

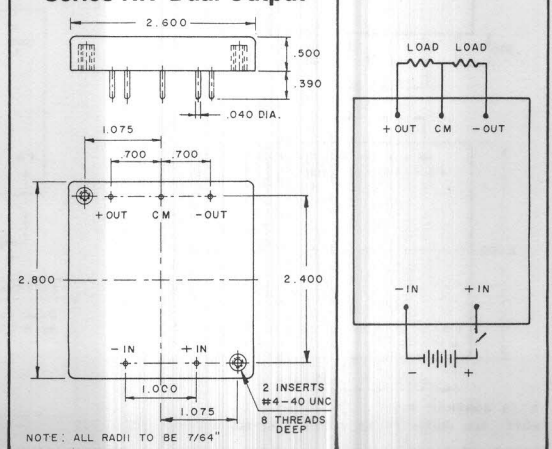
914-699-5514  
FAX 914-699-5565

#### Series NR—Single Output



Typical Weight: 175 Grams

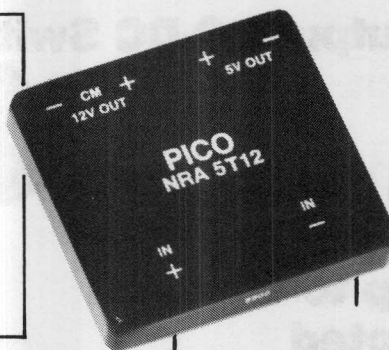
#### Series NR—Dual Output



Typical Weight: 175 Grams



This series of high efficiency wide input range, encapsulated regulators come in 50 different models including 30 Triple Output Models to ease board designs. These units feature a 500 Volt DC input to output isolation in both single, dual and triple output models. The NR Series will operate over an ambient temperature range of  $-25^{\circ}\text{C}$  to  $+70^{\circ}\text{C}$  with no heat sink or electrical derating. These units are excellent for applications where input voltage varies dramatically, yet a high efficiency and output voltage regulation must be maintained.



## SERIES NR

### TYPICAL CHARACTERISTICS:

Test conditions:  $25^{\circ}\text{C}$  ambient

Operating temperature:  $-25^{\circ}\text{C}$  to  $+70^{\circ}\text{C}$  ambient

Output voltage tolerance:

0.5% main outputs

Output voltage temperature coefficient:  $0.01\%/^{\circ}\text{C}$

Storage temperature:  $-55^{\circ}\text{C}$  to  $125^{\circ}\text{C}$

Short circuit protection: Continuous

Operating frequency: 30 KHz, typ.

### SERIES NR TRIPLE OUTPUT

PICO PART NUMBER	INPUT VOLTAGE RANGE	MAIN OUTPUT VOLTAGE					AUXILIARY OUTPUT VOLTAGE					EFF. @ FULL LOAD TYPICAL (%)	INPUT CURRENT FULL LOAD TYPICAL (mA)	PRICE 1-24
		OUTPUT VOLTAGE DC OUTPUT	MAX. LOAD CURRENT mA OUTPUT	MAX. OUTPUT POWER (watts) OUTPUT	V LD. REG. 25%-100% LOAD ( $\pm\%$ )	OUT VOLT RIPPLE @ FULL LD. 1-1 MHz BW mv p-p	OUTPUT VOLTAGE DC PER OUTPUT	MAX. LOAD CURRENT mA PER OUTPUT	MAX. OUTPUT POWER (watts) PER OUTPUT	VOLT. LOAD REG. 25%-100% LOAD ( $\pm\%$ )	OUT VOLT RIPPLE @ FULL LD. 1-1 MHz BW mv p-p			
NRA5T12	18-36	5	3000	15	0.2	50	$\pm 12$	208	2.5	5	50	78	1068	360.00
NRA5T15	18-36	5	3000	15	0.2	50	$\pm 15$	167	2.5	5	50	78	1068	360.00
NRA9T5	18-36	9	2220	20	0.2	50	$\pm 5$	500	2.5	5	50	80	1302	360.00
NRA9T12	18-36	9	2220	20	0.2	50	$\pm 12$	208	2.5	5	50	80	1302	360.00
NRA9T15	18-36	9	2220	20	0.2	50	$\pm 15$	167	2.5	5	50	80	1302	360.00
NRA12T5	18-36	12	1660	20	0.2	50	$\pm 5$	500	2.5	5	50	81	1286	360.00
NRA12T15	18-36	12	1660	20	0.2	50	$\pm 15$	167	2.5	5	50	81	1286	360.00
NRA15T5	18-36	15	1330	20	0.2	50	$\pm 5$	500	2.5	5	50	83	1255	360.00
NRA15T12	18-36	15	1330	20	0.2	50	$\pm 12$	208	2.5	5	50	83	1255	360.00
NRA24T5	18-36	24	830	20	0.2	50	$\pm 5$	500	2.5	5	50	84	1240	360.00
NRA24T12	18-36	24	830	20	0.2	50	$\pm 12$	208	2.5	5	50	84	1240	360.00
NRA24T15	18-36	24	830	20	0.2	50	$\pm 15$	167	2.5	5	50	84	1240	360.00
NRA28T5	18-36	28	714	20	0.2	50	$\pm 5$	500	2.5	5	50	85	1225	360.00
NRA28T12	18-36	28	714	20	0.2	50	$\pm 12$	208	2.5	5	50	85	1225	360.00
NRA28T15	18-36	28	714	20	0.2	50	$\pm 15$	167	2.5	5	50	85	1225	360.00
NRB5T12	36-72	5	3400	17	0.2	50	$\pm 12$	208	2.5	5	50	78	588	389.00
NRB5T15	36-72	5	3400	17	0.2	50	$\pm 15$	167	2.5	5	50	78	588	389.00
NRB9T5	36-72	9	2220	20	0.2	50	$\pm 5$	500	2.5	5	50	80	651	389.00
NRB9T12	36-72	9	2220	20	0.2	50	$\pm 12$	208	2.5	5	50	80	651	389.00
NRB9T15	36-72	9	2220	20	0.2	50	$\pm 15$	167	2.5	5	50	80	651	389.00
NRB12T5	36-72	12	1660	20	0.2	50	$\pm 5$	500	2.5	5	50	84	620	389.00
NRB12T15	36-72	12	1660	20	0.2	50	$\pm 15$	167	2.5	5	50	84	620	389.00
NRB15T5	36-72	15	1667	25	0.2	50	$\pm 5$	500	2.5	5	50	85	735	389.00
NRB15T12	36-72	15	1667	25	0.2	50	$\pm 12$	208	2.5	5	50	85	735	389.00
NRB24T5	36-72	24	1042	25	0.2	50	$\pm 5$	500	2.5	5	50	86	727	389.00
NRB24T12	36-72	24	1042	25	0.2	50	$\pm 12$	208	2.5	5	50	86	727	389.00
NRB24T15	36-72	24	1042	25	0.2	50	$\pm 15$	167	2.5	5	50	86	727	389.00
NRB28T5	36-72	28	893	25	0.2	50	$\pm 5$	500	2.5	5	50	87	718	389.00
NRB28T12	36-72	28	893	25	0.2	50	$\pm 12$	208	2.5	5	50	87	718	389.00
NRB28T15	36-72	28	893	25	0.2	50	$\pm 15$	167	2.5	5	50	87	718	389.00

#### Common Characteristics

Main Output Voltage Tolerance  $\pm 0.5\%$  \*  
Main Line Regulation  $\pm 0.2\%$  \*

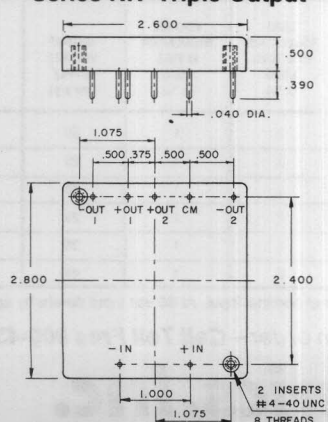
#### Common Characteristics

Auxiliary Output Voltage Tolerance  $\pm 4\%$  \*  
Auxiliary Line Regulation  $\pm 0.2\%$  \*

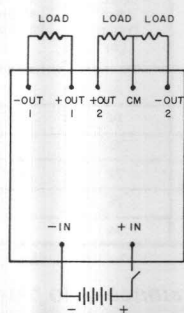
\*  $\pm 10\%$  minimum load required.

\*Measurements taken with input voltage set at mid value.

#### Series NR-Triple Output



Typical Weight: 175 Grams



30 Triple Output Models

Delivery—  
stock to one week

#### OPTIONS AVAILABLE

- Expanded operating temp ( $-55^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$ )
- Stabilization Bake ( $125^{\circ}\text{C}$  ambient)
- Temperature Cycle ( $-55^{\circ}\text{C}$  to  $+125^{\circ}\text{C}$ )
- Hi Temp, full power burn in ( $100\%$  power,  $125^{\circ}\text{C}$  case temp)

For immediate engineering assistance  
or to place an order—

Call Toll Free 800-431-1064

**PICO**  
Electronics, Inc.

453 North Mac Questen Pkwy.  
Mt. Vernon, New York 10552

914-699-5514 • FAX 914-699-5565



# Series LV-Single Output-DC-DC Switching Power Supplies

## Hi Reliability

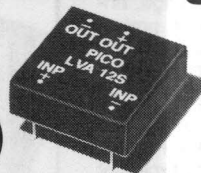
## Industrial Grade

## Wide Input Voltage (36-80 VDC)

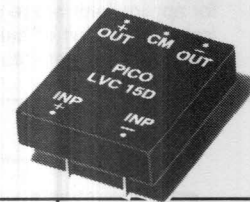
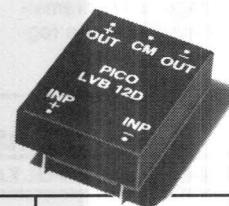
## Isolated 1000 VDC

## Fully Regulated—up to 10 Watts

## Short Circuit Protected



**NO EXTERNAL  
CAPACITORS  
REQUIRED**



### Series LVA-Single Output-3 Watts

PICO PART NUMBER	OUTPUT VOLTAGE (V DC)	MAX. LOAD CURRENT (mA)	MAX OUTPUT POWER (watts)	EFF. @ FULL LOAD TYPICAL (%)	OUTPUT VOLTAGE TOLERANCE (± %)	LOAD REGULATION 25%-100% LOAD (± %)	VOLTAGE REGULATION @ FULL LOAD (± %)	OUTPUT VOLTAGE RIPPLE TYPICAL (mv p-p)	PRICE 1-24
LVA5S	5	600	3	64	2	2	1	20	69.00
LVA12S	12	250	3	65	2	2	1	20	69.00
LVA15S	15	200	3	65	2	2	1	15	69.00
LVA24S	24	125	3	66	2	2	1	15	69.00
LVA28S	28	107	3	66	2	2	1	15	69.00
LVA48S	48	62	3	66	2	2	1	15	69.00

### Series LVB-Single Output-5 Watts

PICO PART NUMBER	OUTPUT VOLTAGE (V DC)	MAX. LOAD CURRENT (mA)	MAX OUTPUT POWER (watts)	EFF. @ FULL LOAD TYPICAL (%)	OUTPUT VOLTAGE TOLERANCE (± %)	LOAD REGULATION 25%-100% LOAD (± %)	VOLTAGE REGULATION @ FULL LOAD (± %)	OUTPUT VOLTAGE RIPPLE TYPICAL (mv p-p)	PRICE 1-24
LVB5S	5	1000	5	68	2	2	1	50	79.00
LVB12S	12	415	5	70	2	2	1	25	79.00
LVB15S	15	330	5	70	2	2	1	25	79.00
LVB24S	24	210	5	72	2	2	1	25	79.00
LVB28S	28	175	5	72	2	2	1	25	79.00
LVB48S	48	105	5	74	2	2	1	25	79.00

### Series LVC-Single Output 8 Watts

PICO PART NUMBER	OUTPUT VOLTAGE (V DC)	MAX. LOAD CURRENT (mA)	MAX * OUTPUT POWER (watts)	EFF. @ FULL LOAD TYPICAL (%)	OUTPUT VOLTAGE TOLERANCE (± %)	LOAD REGULATION 25%-100% LOAD (± %)	VOLTAGE REGULATION @ FULL LOAD (± %)	OUTPUT VOLTAGE RIPPLE TYPICAL (mv p-p)	PRICE 1-24
LVC5S	5	1400	7	68	2	2	1	50	89.00
LVC12S	12	666	8	74	2	2	1	25	89.00
LVC15S	15	533	8	74	2	2	1	25	89.00
LVC24S	24	333	8	74	2	2	1	25	89.00
LVC28S	28	285	8	74	2	2	1	25	89.00
LVC48S	48	166	8	74	2	2	1	25	89.00

\*Max. power at nominal input. At 36 volt input derate by approx. 15%.

### Series LVD-Single Output 10 Watts

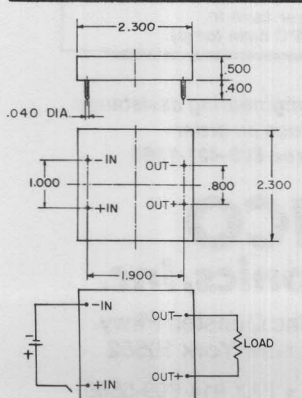
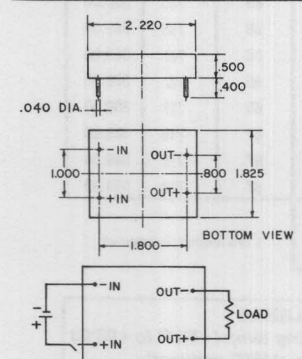
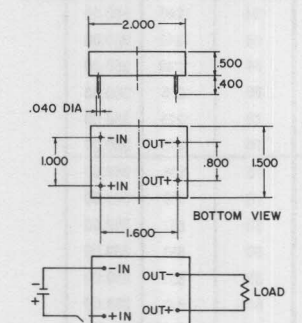
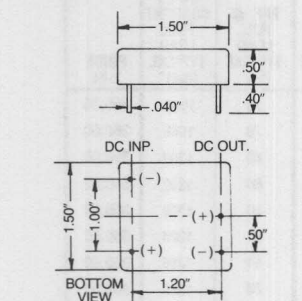
PICO PART NUMBER	OUTPUT VOLTAGE (V DC)	MAX. LOAD CURRENT (mA)	MAX. * OUTPUT POWER (watts)	EFF. @ FULL LOAD TYPICAL (%)	OUTPUT VOLTAGE TOLERANCE (± %)	LOAD REGULATION 25%-100% LOAD (± %)	VOLTAGE REGULATION @ FULL LOAD (± %)	OUTPUT VOLTAGE RIPPLE TYPICAL (mv p-p)	PRICE 1-24
LVD5S	5	1800	9	70	2	2	1	50	99.00
LVD12S	12	833	10	74	2	2	1	25	99.00
LVD15S	15	666	10	74	2	2	1	25	99.00
LVD24S	24	416	10	74	2	2	1	25	99.00
LVD28S	28	357	10	74	2	2	1	25	99.00
LVD48S	48	208	10	74	2	2	1	25	99.00

\*Max. power at nominal input. At 36 volt input derate by approx. 15%.

For immediate engineering assistance or to place an order—Call Toll Free 800-431-1064

# PICO Electronics, Inc.

453 N. MacQuesten Pkwy., Mt. Vernon, N.Y. 10552 • 914-699-5514 • FAX 914-699-5565



# Series LV-Dual Output-DC-DC Switching Power Supplies

## FEATURES:

- Excellent line regulation  $\pm 1\%$  (36–80 VDC)
- Excellent load regulation, from 25% to 100%,  $\pm 2\%$
- Continuous short circuit protection
- Encapsulated semiconductors, conservatively rated for maximum reliability
- Isolation: 100 megohms at 1000 VDC
- Wide input 36 VDC to 80 VDC

PICO's LV Series with wide input voltages are available in 36 different models. As switchers they accommodate a 36 to 80 VDC input, and offer both single and dual, regulated outputs. These isolated units will operate over a temperature range of  $-25^{\circ}\text{C}$  to  $70^{\circ}\text{C}$  with no heat sink or electrical derating required. They are excellent for applications where the input voltage is highly variable such as in telecommunication systems.

**.5" Height**

## TYPICAL CHARACTERISTICS:

Test conditions:  $25^{\circ}\text{C}$  ambient

Input voltage: 36–80 VDC

Converter frequency: 200 KHz to 1 MHz

Operating temperature:  $-20^{\circ}\text{C}$  to  $+70^{\circ}\text{C}$  ambient

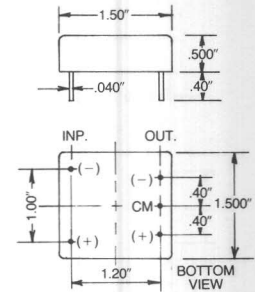
Storage temperature:  $-55^{\circ}\text{C}$  to  $+125^{\circ}\text{C}$

Output voltage temperature coefficient:  $0.02\%/^{\circ}\text{C}$

Isolation: 1000 VDC

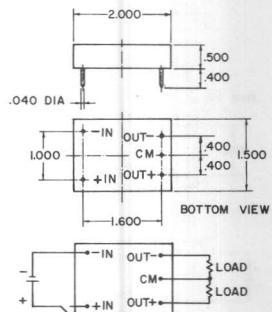
## Series LVA-Dual Output-3 Watts

PICO PART NUMBER	OUTPUT VOLTAGE (V DC)	MAX. LOAD CURRENT PER OUT. (mA)	MAX OUTPUT POWER PER OUT. (watts)	EFF. @ FULL LOAD TYPICAL (%)	OUTPUT VOLTAGE TOLERANCE ( $\pm\%$ )	LOAD REGULATION 25%-100% LOAD ( $\pm\%$ )	VOLTAGE REGULATION @ FULL LOAD ( $\pm\%$ )	OUTPUT VOLTAGE RIPPLE TYPICAL (mv p-p)	PRICE 1-24
LVA5D	$\pm 5$	300	1.5	60	2	2	1	25	82.00
LVA12D	$\pm 12$	125	1.5	65	2	2	1	25	82.00
LVA15D	$\pm 15$	100	1.5	67	2	2	1	25	82.00



## Series LVB-Dual Output-5 Watts

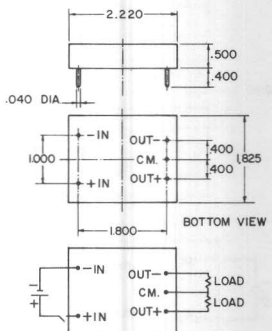
PICO PART NUMBER	OUTPUT VOLTAGE (V DC)	MAX. LOAD CURRENT PER OUT. (mA)	MAX OUTPUT POWER PER OUT. (watts)	EFF. @ FULL LOAD TYPICAL (%)	OUTPUT VOLTAGE TOLERANCE ( $\pm\%$ )	LOAD REGULATION 25%-100% LOAD ( $\pm\%$ )	VOLTAGE REGULATION @ FULL LOAD ( $\pm\%$ )	OUTPUT VOLTAGE RIPPLE TYPICAL (mv p-p)	PRICE 1-24
LVB5D	$\pm 5$	500	2.5	68	2	2	1	50	92.00
LVB12D	$\pm 12$	200	2.5	70	2	2	1	25	92.00
LVB15D	$\pm 15$	165	2.5	70	2	2	1	25	92.00



## Series LVC-Dual Output 8 Watts

PICO PART NUMBER	OUTPUT VOLTAGE (V DC)	MAX. * LOAD CURRENT PER OUT. (mA)	MAX OUTPUT POWER PER OUT. (watts)	EFF. @ FULL LOAD TYPICAL (%)	OUTPUT VOLTAGE TOLERANCE ( $\pm\%$ )	LOAD REGULATION 25%-100% LOAD ( $\pm\%$ )	VOLTAGE REGULATION @ FULL LOAD ( $\pm\%$ )	OUTPUT VOLTAGE RIPPLE TYPICAL (mv p-p)	PRICE 1-24
LVC5D	$\pm 5$	700	3.5	68	2	2	1	50	102.00
LVC12D	$\pm 12$	333	4	74	2	2	1	25	102.00
LVC15D	$\pm 15$	266	4	74	2	2	1	25	102.00

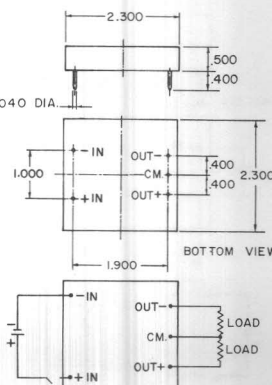
\*Max. power at nominal input. At 36 volt input derate by approx. 15%.



## Series LVD-Dual Output 10 Watts

PICO PART NUMBER	OUTPUT VOLTAGE (V DC)	MAX. * LOAD CURRENT PER OUT. (mA)	MAX OUTPUT POWER PER OUT. (watts)	EFF. @ FULL LOAD TYPICAL (%)	OUTPUT VOLTAGE TOLERANCE ( $\pm\%$ )	LOAD REGULATION 25%-100% LOAD ( $\pm\%$ )	VOLTAGE REGULATION @ FULL LOAD ( $\pm\%$ )	OUTPUT VOLTAGE RIPPLE TYPICAL (mv p-p)	PRICE 1-24
LVD5D	$\pm 5$	900	4.5	70	2	2	1	50	112.00
LVD12D	$\pm 12$	415	5	74	2	2	1	25	112.00
LVD15D	$\pm 15$	333	5	74	2	2	1	25	112.00

\*Max. power at nominal input. At 36 volt input derate by approx. 15%.



For immediate engineering assistance or to place an order—Call Toll Free 800-431-1064

# PICO Electronics, Inc.

453 N. MacQuesten Pkwy., Mt. Vernon, N.Y. 10552 • 914-699-5514 • FAX 914-699-5565



# Series HV-Single Output-DC-DC Switching Power Supplies

## Hi Reliability

## Industrial Grade

## Hi Input Voltage (70–170 VDC)

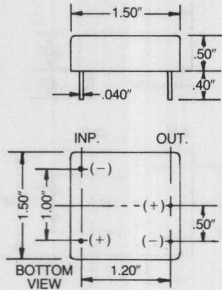
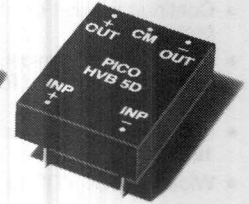
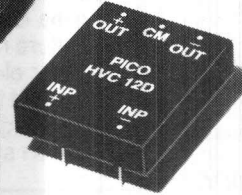
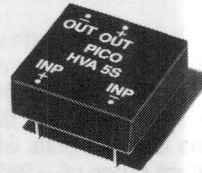
## Isolated 1000 VDC

## Fully Regulated—up to 15 Watts

## Short Circuit Protected

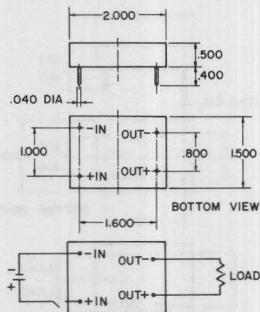
No Heat Sink  
or Electrical  
Derating Required

NO EXTERNAL  
CAPACITORS  
REQUIRED



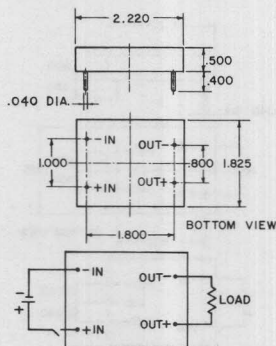
### Series HVA-Single Output-3 Watts

PICO PART NUMBER	OUTPUT VOLTAGE (V DC)	MAX. LOAD CURRENT (mA)	MAX OUTPUT POWER (watts)	EFF. @ FULL LOAD TYPICAL (%)	OUTPUT VOLTAGE TOLERANCE (± %)	LOAD REGULATION 25%-100% LOAD (± %)	VOLTAGE REGULATION @ FULL LOAD (± %)	OUTPUT VOLTAGE RIPPLE (mv p-p)	PRICE 1-24
HVA5S	5	600	3	65	2	2	0.5	50	69.00
HVA12S	12	250	3	67	2	2	0.5	25	69.00
HVA15S	15	200	3	67	2	2	0.5	25	69.00
HVA24S	24	125	3	68	2	2	0.5	25	69.00
HVA28S	28	105	3	68	2	2	0.5	25	69.00



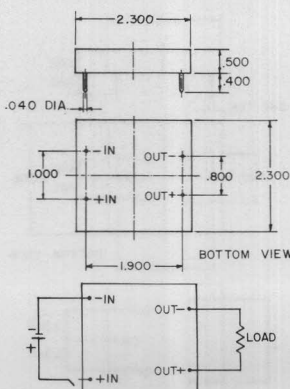
### Series HVB-Single Output-5 Watts

PICO PART NUMBER	OUTPUT VOLTAGE (V DC)	MAX. LOAD CURRENT (mA)	MAX OUTPUT POWER (watts)	EFF. @ FULL LOAD TYPICAL (%)	OUTPUT VOLTAGE TOLERANCE (± %)	LOAD REGULATION 25%-100% LOAD (± %)	VOLTAGE REGULATION @ FULL LOAD (± %)	OUTPUT VOLTAGE RIPPLE TYPICAL (mv p-p)	PRICE 1-24
HVB5S	5	600	5	70	2	2	1	50	79.00
HVB12S	12	415	5	73	2	2	1	25	79.00
HVB15S	15	330	5	73	2	2	1	25	79.00
HVB24S	24	200	5	74	2	2	1	25	79.00
HVB28S	28	175	5	74	2	2	1	25	79.00



### Series HVC-Single Output-10 Watts

PICO PART NUMBER	OUTPUT VOLTAGE (V DC)	MAX. LOAD CURRENT (mA)	MAX OUTPUT POWER (watts)	EFF. @ FULL LOAD TYPICAL (%)	OUTPUT VOLTAGE TOLERANCE (± %)	LOAD REGULATION 25%-100% LOAD (± %)	VOLTAGE REGULATION @ FULL LOAD (± %)	OUTPUT VOLTAGE RIPPLE TYPICAL (mv p-p)	PRICE 1-24
HVC5S	5	1600	8	69	2	2	1	50	89.00
HVC12S	12	830	10	75	2	2	1	25	89.00
HVC15S	15	660	10	77	2	2	1	25	89.00
HVC24S	24	415	10	77	2	2	1	25	89.00
HVC28S	28	355	10	77	2	2	1	25	89.00



### Series HVD-Single Output-15 Watts

PICO PART NUMBER	OUTPUT VOLTAGE (V DC)	MAX. LOAD CURRENT (mA)	MAX OUTPUT POWER (watts)	EFF. @ FULL LOAD TYPICAL (%)	OUTPUT VOLTAGE TOLERANCE (± %)	LOAD REGULATION 25%-100% LOAD (± %)	VOLTAGE REGULATION @ FULL LOAD (± %)	OUTPUT VOLTAGE RIPPLE TYPICAL (mv p-p)	PRICE 1-24
HVD5S	5	2000	10	70	2	2	1	50	99.00
HVD12S	12	1250	15	75	2	2	1	25	99.00
HVD15S	15	1000	15	76	2	2	1	25	99.00
HVD24S	24	625	15	76	2	2	1	25	99.00
HVD28S	28	535	15	76	2	2	1	25	99.00

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# PICO Electronics, Inc.

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# Series HV-Dual Output-DC-DC Switching Power Supplies

## FEATURES:

- Excellent line regulation  $\pm 1\%$  (70 VDC-170 VDC)
- Excellent load regulation, from 25% to 100%,  $\pm 2\%$
- Continuous short circuit protection
- Encapsulated semiconductors, conservatively rated for maximum reliability
- Isolation: 100 megohms at 1000 VDC
- Wide input 70 VDC to 170 VDC

PICO's HV Series with wide input voltages are available in 32 different models. As switchers they accommodate a 70 to 170 VDC input, and offer both single and dual, regulated outputs. These isolated units will operate over a temperature range of  $-25^{\circ}\text{C}$  to  $+70^{\circ}\text{C}$  with no heat sink or electrical derating required. They are excellent for applications where a rectified output from a 110 VAC source is available.

**.5" Height**

## TYPICAL CHARACTERISTICS

Test conditions:  $25^{\circ}\text{C}$  ambient

Input voltage: 70-170 VDC

Converter frequency: 200 KHz to 1 MHz

Operating temperature:  $-20^{\circ}\text{C}$  to  $+70^{\circ}\text{C}$  ambient

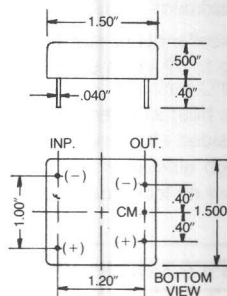
Storage temperature:  $-55^{\circ}\text{C}$  to  $+125^{\circ}\text{C}$

Output voltage temperature coefficient:  $0.02\%/^{\circ}\text{C}$

Isolation: 1000 VDC

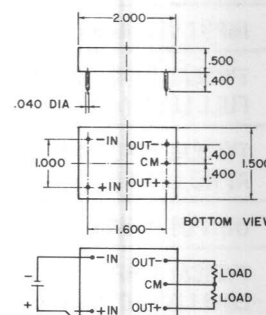
## Series HVA-Dual Output-3 Watts

PICO PART NUMBER	OUTPUT VOLTAGE (V DC)	MAX. LOAD CURRENT PER OUT. (mA)	MAX. OUTPUT POWER PER OUT. (watts)	EFF. @ FULL LOAD TYPICAL (%)	OUTPUT VOLTAGE TOLERANCE ( $\pm\%$ )	LOAD REGULATION 25%-100% LOAD ( $\pm\%$ )	VOLTAGE REGULATION @ FULL LOAD ( $\pm\%$ )	OUTPUT VOLTAGE RIPPLE TYPICAL (mv p-p)	PRICE 1-24
HVA5D	$\pm 5$	300	1.5	63	2	2	1	50	82.00
HVA12D	$\pm 12$	125	1.5	65	2	2	1	25	82.00
HVA15D	$\pm 15$	100	1.5	67	2	2	1	25	82.00



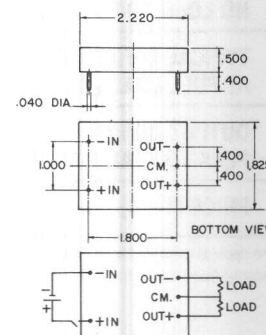
## Series HVB-Dual Output-5 Watts

PICO PART NUMBER	OUTPUT VOLTAGE (V DC)	MAX. LOAD CURRENT PER OUT. (mA)	MAX. OUTPUT POWER PER OUT. (watts)	EFF. @ FULL LOAD TYPICAL (%)	OUTPUT VOLTAGE TOLERANCE ( $\pm\%$ )	LOAD REGULATION 25%-100% LOAD ( $\pm\%$ )	VOLTAGE REGULATION @ FULL LOAD ( $\pm\%$ )	OUTPUT VOLTAGE RIPPLE TYPICAL (mv p-p)	PRICE 1-24
HVB5D	$\pm 5$	500	2.5	70	2	2	1	50	92.00
HVB12D	$\pm 12$	200	2.5	73	2	2	1	25	92.00
HVB15D	$\pm 15$	165	2.5	73	2	2	1	25	92.00



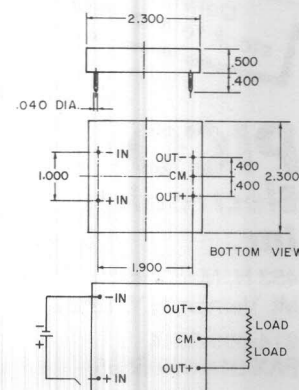
## Series HVC-Dual Output-10 Watts

PICO PART NUMBER	OUTPUT VOLTAGE (V DC)	MAX. LOAD CURRENT PER OUT. (mA)	MAX. OUTPUT POWER PER OUT. (watts)	EFF. @ FULL LOAD TYPICAL (%)	OUTPUT VOLTAGE TOLERANCE ( $\pm\%$ )	LOAD REGULATION 25%-100% LOAD ( $\pm\%$ )	VOLTAGE REGULATION @ FULL LOAD ( $\pm\%$ )	OUTPUT VOLTAGE RIPPLE TYPICAL (mv p-p)	PRICE 1-24
HVC5D	$\pm 5$	800	4	68	2	2	1	50	102.00
HVC12D	$\pm 12$	415	5	75	2	2	1	25	102.00
HVC15D	$\pm 15$	335	5	76	2	2	1	25	102.00



## Series HVD-Dual Output-15 Watts

PICO PART NUMBER	OUTPUT VOLTAGE (V DC)	MAX. LOAD CURRENT PER OUT. (mA)	MAX. OUTPUT POWER PER OUT. (watts)	EFF. @ FULL LOAD TYPICAL (%)	OUTPUT VOLTAGE TOLERANCE ( $\pm\%$ )	LOAD REGULATION 25%-100% LOAD ( $\pm\%$ )	VOLTAGE REGULATION @ FULL LOAD ( $\pm\%$ )	OUTPUT VOLTAGE RIPPLE TYPICAL (mv p-p)	PRICE 1-24
HVD5D	$\pm 5$	1000	5	69	2	5	1	50	112.00
HVD12D	$\pm 12$	625	7.5	75	2	2	1	25	112.00
HVD15D	$\pm 15$	500	7.5	76	2	2	1	25	112.00



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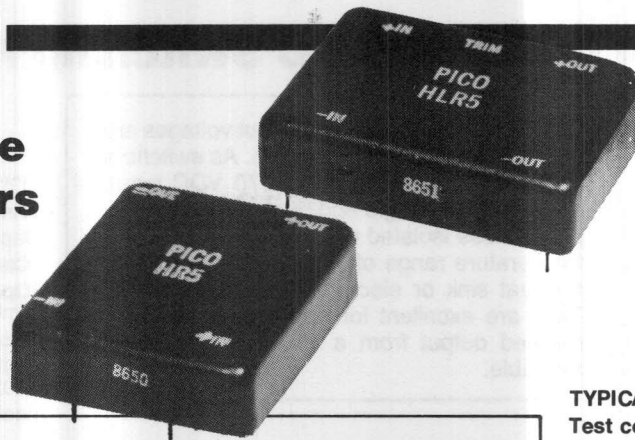
# SERIES HR/HRL

## Hi Reliability

## Wide Input Range

## DC-DC Converters

## up to 12 Watts



### OPTIONS AVAILABLE

- Expanded operating temp. (-55°C to +85°C)
- Stabilization Bake (125°C ambient)
- Temperature Cycle (-55°C to +125°C)
- Hi Temp, full power burn in (100% power, 125°C case temp)

### FEATURES:

- Excellent voltage regulation.
- Encapsulated semiconductors, conservatively rated for maximum reliability
- Excellent load regulation
- Up to 12 watts output power at 70°C ambient.
- No heat sink required
- 6 sided shielding
- High efficiency (up to 90%)
- Low no load currents

This series of non-isolated encapsulated converters come in 6 different models. The units are single output and will operate over a temperature range of -25°C to +70°C. No heat sink is required. These units are excellent for applications where the input voltages varies over a wide range, yet they maintain a high efficiency and offer low no load currents.

### TYPICAL CHARACTERISTICS:

Test conditions: = 25°C ambient

Output voltage tolerance:  $\pm 1\%$  on all units

Line regulation: (see table below)

Operating temperature: -25°C to +70°C

Output voltage temperature coefficient: 0.01% HRL 9 volt unit

0.005% all other models

Storage temperature: -55°C to +125°C

Short circuit protection: Temporary

Typical operating frequency: 30-50 KHz

PICO PART NUMBER		HR 5	HR 12	HR 15	HRL 9	HRL 12	HRL 15
OUTPUT VOLTAGE (VOLTS)		5	12	15	9	12	15
INPUT VOLTAGE RANGE (VOLTS)		17 to 35	17 to 35	17 to 35	5 to 9	5 to 12	5 to 15
TYPICAL INPUT CURRENT AT FULL LOAD (mA)	LOW LINE	475	560	785	2600	2600	2600
	HIGH LINE	245	285	408	1250	930	740
TYPICAL INPUT CURRENT AT NO LOAD (mA)		8.5	8.5	8.5	10	10	10
OUTPUT POWER (WATTS)		6	8	12	10	10	10
TYPICAL LINE REGULATION LOW LINE TO HIGH LINE (%)		0.5	0.2	0.2	.7	.7	.5
TYPICAL LOAD REGULATION NO LOAD TO FULL LOAD (%)		1.0	0.5	0.5	2	3	1.5
TYPICAL EFFICIENCY AT FULL LOAD (%)	LOW LINE	75	84	90	77	77	77
	HIGH LINE	70	80	84	88	89	90
OUTPUT RIPPLE PEAK TO PEAK MAXIMUM (mV)		200	200	200	100*	100*	100*
PRICE (1-24)		117.70	117.70	117.70	117.70	117.70	117.70

\*The ripple is measured with a 10 $\mu$ f, 35 volt tantalum capacitor which is required across the output.

Ordering Instructions: No minimum. Net 30 days F.O.B. Mt. Vernon, New York.

Delivery—  
stock to one week

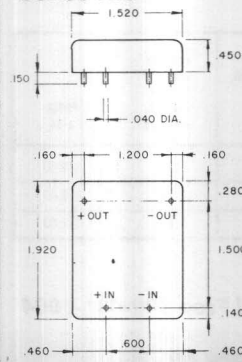
**PICO**  
Electronics,  
Inc.

453 N. MacQuesten Pkwy.  
Mt. Vernon, N.Y. 10552

914-699-5514

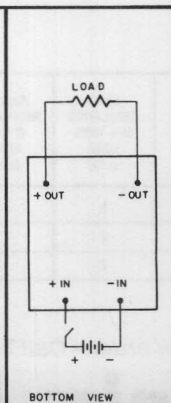
FAX 914-699-5565

### Series HR



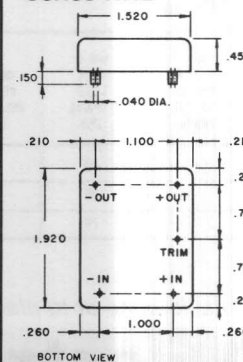
NOTE: ALL RADII TO BE 7/64"

Typical Weight: 60 Grams



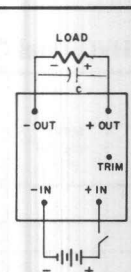
BOTTOM VIEW

### Series HRL



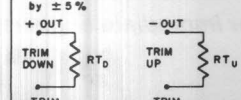
NOTE: ALL RADII TO BE 7/64"

Typical Weight: 60 Grams



### EXTERNAL OUTPUT TRIMMING

Output can be externally trimmed by  $\pm 5\%$





# PICO

**Lowest Profile 0.5" ht., up to 55 Watts**

## Hi-Reliability Ultra-Miniature AC-DC Power Supplies



**Now available with  
170 VAC to 240 VAC  
Input Voltage**

### PICO Electronics, Inc.

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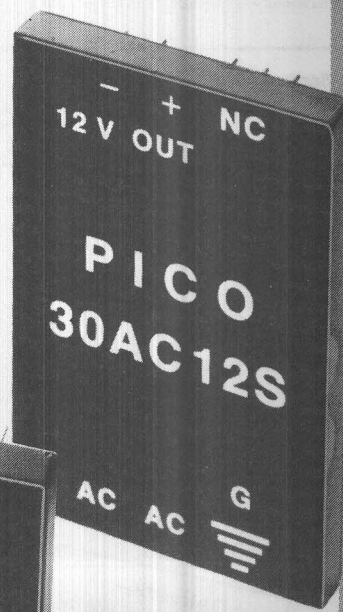
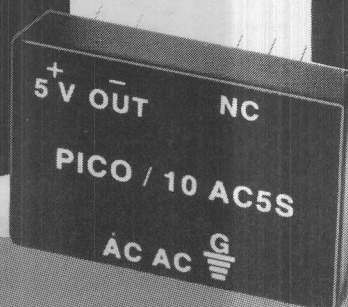
IN NY CALL  
914-699-5514

FAX 914-699-5565

**OPTIONS AVAILABLE  
PER MIL-STD-883**

- Expanded operating temp.  
(-55°C to +85°C)
- Stabilization Bake  
(125°C ambient)
- Temperature Cycle  
(-55°C to +125°C)
- Hi Temp, burn in

AC-DC LINEAR MODULES . . . Series LAC/TLAC Regulated, Isolated <i>Single, Dual and Triple, Wide Input Range up to 10 Watts</i>	90	91
AC-DC SWITCHERS . . . Series SW, Regulated, Isolated, Industrial <i>Low Profile .5" ht., up to 15 Watts</i>	92	93
AC-DC SWITCHERS . . . Series 5AC, Regulated, Isolated <i>Single and Dual, Lowest Profile 0.5" ht., up to 5 Watts</i>	94	
AC-DC SWITCHERS . . . Series 10 AC, Regulated, Isolated <i>Single, Dual and Triple, Lowest Profile, 0.5" ht., up to 10 Watts</i>	95	
AC-DC SWITCHERS . . . Series 30 AC, Regulated, Isolated <i>Single, Dual and Triple, Lowest Profile, 0.5" ht., up to 30 Watts</i>	96	
AC-DC SWITCHERS . . . Series 50 AC, Regulated, Isolated <i>Single, Dual and Triple, Lowest Profile, 0.5" ht., up to 55 Watts</i>	97	
AC-DC SWITCHERS . . . OFU 3, 4, 6 Universal Input, 85-264 VAC PCB Design <i>Multiple Outputs, up to 65 Watts</i>	98	99
AC-DC SWITCHERS . . . OFB 5, 13 Fully Enclosed, Jumper Selectable <i>Multiple Outputs, up to 130 Watts</i>	100	101
AC-DC SWITCHERS . . . OFJ 10, 20 PCB or L-bracket Design, Jumper Selectable <i>Multiple Outputs, up to 200 Watts</i>	102	103
OPTIONAL SCREENING PER MIL-STD-883	104	
ORDERING INFORMATION	105	



## SERIES LAC-TLAC

**Hi Reliability  
Isolated  
Regulated  
AC-DC Linear  
Modules**

**TLAC Standard  
Terminal Strip Modules**

**Single, Dual & Triple Outputs  
Up to 10 Watts**

### TYPICAL CHARACTERISTICS:

Test conditions: 25°C ambient  
Input voltage: 105-125 VAC  
Input frequency: 50 to 440 Hz  
Line/load regulation: Consult chart  
Output voltage tolerance:  $\pm 1.0\%$   
Operating temperature: -25°C to +70°C  
Output voltage temperature coefficient: 0.02% 1°C  
Storage temperature: -55°C to +85°C  
Typical isolation: 100 megohms  
Short circuit protection: Continuous



## Series LAC-TLAC AC-DC Linear Modules

### FEATURES:

- Terminal strips available-TLAC
- Low output ripple = 1 to 2 mV RMS
- Encapsulated semiconductors, conservatively rated for maximum reliability
- Excellent voltage regulation
- Excellent load regulation
- Up to 9 watts output power at 70°C ambient
- Typical isolation 100 megohms
- Single, dual and triple outputs
- No heat sink required
- No output capacitor required

This series of linear AC to DC Power Supplies are available in 46 different models. All single, dual and triple output models offer excellent line and load regulation, while maintaining the output voltage ripple at a minimum. Continuous short-circuit protection and isolation are also standard on all models. The convenience of PC mounting, with mounting inserts, allows the use of this encapsulated unit in harsh environments, and the TLAC models offer a terminal strip for easy electrical connection.

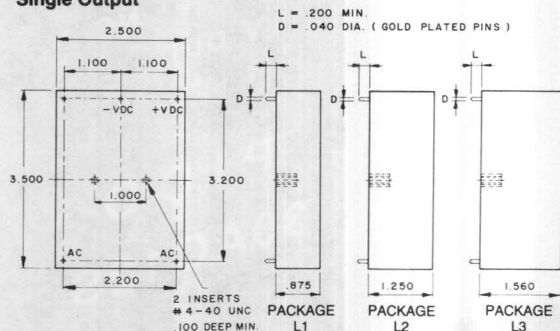
## SERIES LAC-TLAC SINGLE OUTPUT

PICO PART NUMBER	OUTPUT VOLTAGE VDC	MAX. LOAD CURRENT mA	MAX. OUTPUT POWER (watts)	OUT VOLT TOLERANCE ( $\pm\%$ )*	V LD. REG. LOAD	LINE REGULATION	OUTPUT VOLTAGE RIPPLE @ FULL LOAD mV RMS	PACKAGE NUMBER		HEIGHT INCHES	L PKG PRICE 1-24	T ** PACKAGE 1-24
LAC 5/500S	5	500	2.5	1.0	0.2	0.05	1	L1	T1	.875	69.00	83.00
LAC 5/1000S	5	1000	5	1.0	0.2	0.05	1	L2	T2	1.250	85.00	99.00
LAC 5/2000S	5	2000	10	1.0	0.2	0.05	1	L3	T3	1.560	99.00	113.00
LAC 12/120S	12	120	1.44	1.0	0.1	0.10	1	L1	T1	.875	69.00	83.00
LAC 12/200S	12	200	2.4	1.0	0.1	0.10	1	L2	T2	1.250	85.00	99.00
LAC 12/500S	12	500	6.0	1.0	0.1	0.10	1	L3	T3	1.560	99.00	113.00
LAC 15/120S	15	120	1.8	1.0	0.1	0.10	1	L1	T1	.875	69.00	83.00
LAC 15/200S	15	200	3.0	1.0	0.1	0.10	1	L2	T2	1.250	85.00	99.00
LAC 15/500S	15	500	7.5	1.0	0.1	0.10	1	L3	T3	1.560	99.00	113.00
LAC 24/100S	24	100	2.4	1.0	0.1	0.10	1	L1	T1	.875	69.00	83.00
LAC 24/300S	24	300	7.2	1.0	0.1	0.10	1	L3	T3	1.560	99.00	113.00

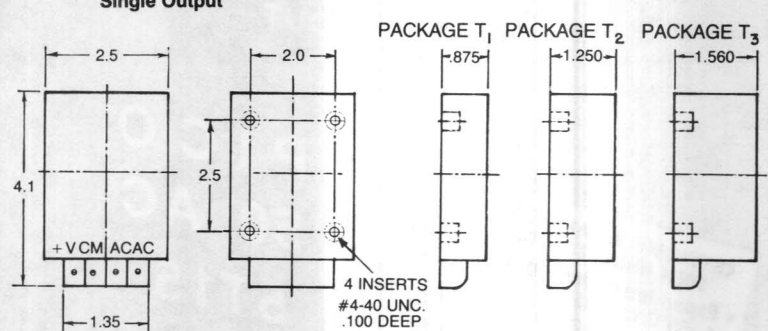
\*Consult factory for special voltage requirements

\*\* For terminal strip model add "T" to front of part number.

### Series LAC Single Output



### Series TLAC Single Output



**Delivery—  
stock to one week**

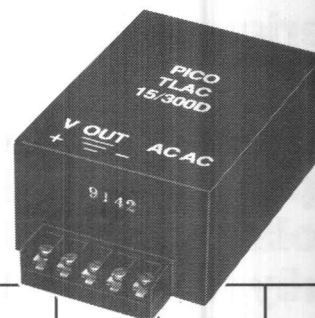
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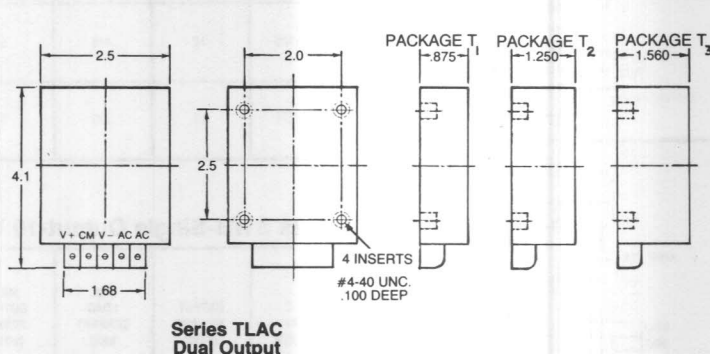


## TLAC Standard Terminal Strip Models

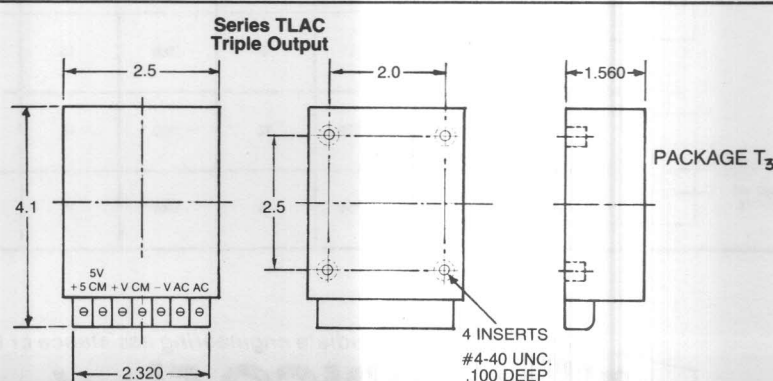


** PICO PART NUMBER	OUTPUT VOLTAGE VDC	MAX. LOAD CURRENT mA	MAX. OUTPUT POWER (watts)	OUT VOLT TOLERANCE (±%) *	V LD. REG. LOAD	LINE REGULATION	OUTPUT VOLTAGE RIPPLE @ FULL LOAD MV RMS	PACKAGE NUMBER		HEIGHT INCHES	L PKG PRICE 1-24	T ** PACKAGE 1-24
LAC 5/200D	5	200	1.0	1%	0.1%	.05%	1	L2	T2	1.250	95.00	109.00
LAC 5/300D	5	300	1.5	1%	0.1%	.05%	1	L3	T3	1.560	110.00	124.00
LAC 12/100D	12	100	1.2	1%	0.1%	.02%	1	L1	T1	.875	95.00	109.00
LAC 12/300D	12	300	3.6	1%	0.1%	.02%	1	L3	T3	1.560	110.00	124.00
LAC 15/100D	15	100	1.5	1%	0.1%	.02%	1	L1	T1	.875	95.00	109.00
LAC 15/300D	15	300	4.5	1%	0.1%	.02%	1	L3	T3	1.560	110.00	124.00
LAC 24/100D	24	100	2.4	1%	0.2%	0.1%	1	L2	T2	1.250	95.00	109.00
LAC 24/200D	24	200	4.8	1%	0.2%	0.1%	1	L3	T3	1.560	110.00	124.00

\* \* For terminal strip model add "T" to front of part number.



	MAIN OUTPUT VOLTAGE					AUXILIARY OUTPUT VOLTAGE									
** PICO PART NUMBER	OUTPUT VOLTAGE DC OUTPUT	MAX LOAD CURRENT mA OUTPUT	MAX OUTPUT POWER (watts) OUTPUT	V.D.REG. LOAD %	OUTPUT VOLTAGE RIPPLE @ FULL LOAD MV RMS	OUTPUT VOLTAGE DC PER OUTPUT	MAX. LOAD CURRENT mA PER OUTPUT	MAX. OUTPUT POWER (watts) PER OUTPUT	VOLT. LOAD REG. LOAD %	OUTPUT VOLTAGE RIPPLE @ FULL LOAD MV RMS	PACKAGE NUMBER		HEIGHT INCHES	L PKG PRICE 1-24	T ** PRICE 1-24
LAC 512A	5	250	1.25	0.2	1.0	12	120	1.44	0.1	1.0	L3	T3	1.56	115.00	129.00
LAC 512S	5	500	2.5	0.2	1.0	12	120	1.44	0.1	1.0	L3	T3	1.56	130.00	144.00
LAC 515A	5	250	1.25	0.2	1.0	15	100	1.50	0.1	1.0	L3	T3	1.56	115.00	129.00
LAC 515B	5	500	2.5	0.2	1.0	15	100	1.50	0.1	1.0	L3	T3	1.56	130.00	144.00
Common Characteristics Main Output Voltage Tolerance $\pm 0.5\%$ * Main Line Regulation $\pm 0.2\%$						Common Characteristics Auxiliary Output Voltage Tolerance $\pm 0.5\%$ * Auxiliary Line Regulation $\pm 0.2\%$					* Measurements taken at 115VAC-60Hz ** For terminal strip model add "T" to front of part number.				



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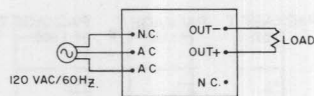
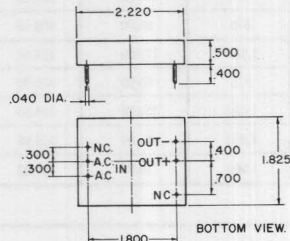
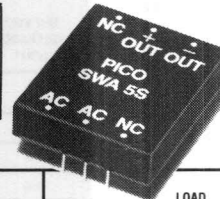
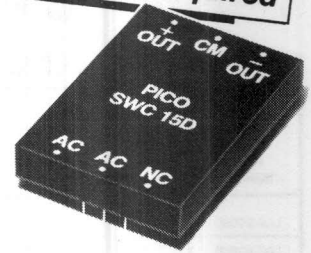
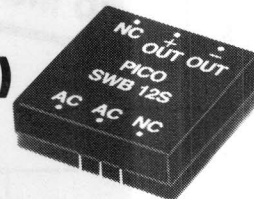


# Series SW-Single Output-AC-DC Switching Power Supplies

## Hi Reliability Industrial Grade Input Voltage (90-130 VAC, 60 Hz) Isolated 1200 VRMS Fully Regulated—up to 15 Watts Short Circuit Protected

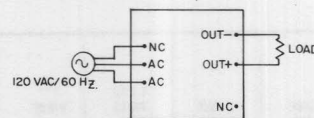
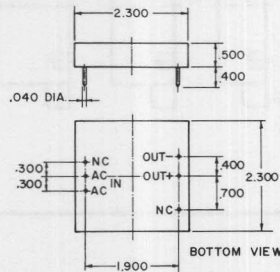
**NO EXTERNAL  
CAPACITORS  
REQUIRED**

**No Heat Sink  
or Electrical  
Derating Required**



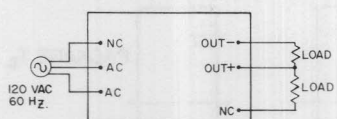
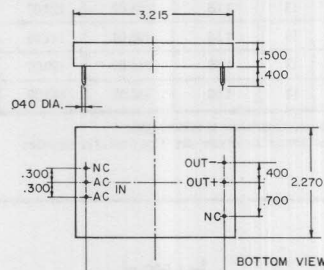
**Series SWA-Single Output-5 Watts**

PICO PART NUMBER	OUTPUT VOLTAGE (V DC)	MAX. LOAD CURRENT (mA)	MAX. OUTPUT POWER (watts)	EFF. @ FULL LOAD (%)	OUTPUT VOLTAGE TOLERANCE (±%)	LOAD REGULATION 25% - 100% LOAD (±%)	LINE REGULATION @ FULL LOAD (±%)	OUTPUT VOLTAGE RIPPLE (mv p-p)	PRICE 1-24
SWA5S	5	1000	5	68	2	2	1	50	79.00
SWA12S	12	415	5	68	2	2	1	25	79.00
SWA15S	15	330	5	70	2	2	1	25	79.00



**Series SWB-Single Output-10 Watts**

PICO PART NUMBER	OUTPUT VOLTAGE (V DC)	MAX. LOAD CURRENT (mA)	MAX. OUTPUT POWER (watts)	EFF. @ FULL LOAD (%)	OUTPUT VOLTAGE TOLERANCE (±%)	LOAD REGULATION 25% - 100% LOAD (±%)	LINE REGULATION @ FULL LOAD (±%)	OUTPUT VOLTAGE RIPPLE (mv p-p)	PRICE 1-24
SWB5S	5	1600	8	67	2	2	1	50	89.00
SWB12S	12	830	10	73	2	2	1	25	89.00
SWB15S	15	660	10	75	2	2	1	25	89.00



**Series SWC-Single Output-15 Watts**

PICO PART NUMBER	OUTPUT VOLTAGE (V DC)	MAX. LOAD CURRENT (mA)	MAX. OUTPUT POWER (watts)	EFF. @ FULL LOAD (%)	OUTPUT VOLTAGE TOLERANCE (±%)	LOAD REGULATION 25% - 100% LOAD (±%)	LINE REGULATION @ FULL LOAD (±%)	OUTPUT VOLTAGE RIPPLE (mv p-p)	PRICE 1-24
SWC5S	5	2000	10	67	2	2	1	50	99.00
SWC12S	12	1250	15	73	2	2	1	25	99.00
SWC15S	15	1000	15	74	2	2	1	25	99.00

**Delivery—  
stock to one week**

For immediate engineering assistance or to place an order—Call Toll Free 800-431-1064

**PICO Electronics, Inc.**

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# Series SW-Dual Output-AC-DC Switching Power Supplies

## FEATURES:

- Excellent line regulation  $\pm 1\%$  (90-130 VAC)
- Excellent load regulation, from 25% to 100%,  $\pm 2\%$
- Continuous short circuit protection
- Encapsulated semiconductors, conservatively rated for maximum reliability
- Isolation: 100 megohms at 1200 VRMS
- Wide input 90-130 VAC, 60 Hz

This series of switching AC-DC power supplies are available in 18 different models. All single and dual outputs are isolated and offer excellent line and load regulation. These units have continuous short circuit protection, require no output capacitors and will operate from  $-25^{\circ}\text{C}$  to  $+70^{\circ}\text{C}$  ambient, with no heat sink or electrical derating required. The hi-reliability SW Series, up to 15 Watts, is the design choice for your stringent industrial applications.

**.5" Height**

## TYPICAL CHARACTERISTICS:

Test conditions:  $25^{\circ}\text{C}$  ambient

Input voltage: 90-130 VAC 60 Hz

Converter frequency: 200 - 800 KHz

Operating temperature:  $-20^{\circ}\text{C}$  to  $+70^{\circ}\text{C}$  ambient

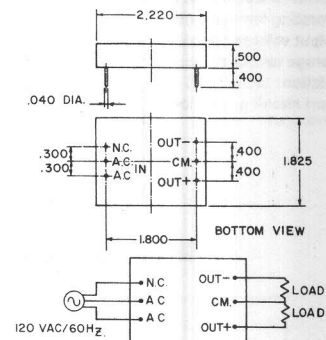
Storage temperature:  $-55^{\circ}\text{C}$  to  $+125^{\circ}\text{C}$

Output voltage temperature coefficient:  $0.02\%/^{\circ}\text{C}$

Isolation: 1200 VRMS

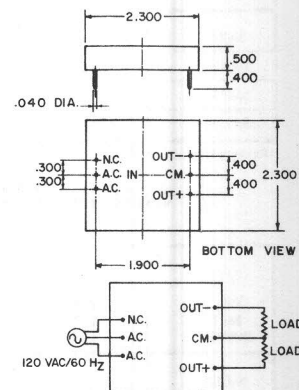
## Series SWA-Dual Output-5 Watts

PICO PART NUMBER	OUTPUT VOLTAGE (V DC)	MAX. LOAD CURRENT (mA) per output	MAX. OUTPUT POWER (watts) PER OUTPUT	EFF. @ FULL LOAD (%)	OUTPUT VOLTAGE TOLERANCE ( $\pm\%$ )	LOAD REGULATION 25% - 100% LOAD ( $\pm\%$ )	LINE REGULATION @ FULL LOAD ( $\pm\%$ )	OUTPUT VOLTAGE RIPPLE (mv p-p)	PRICE 1-24
SWA5D	$\pm 5$	500	2.5	68	2	2	1	50	92.00
SWA12D	$\pm 12$	200	2.5	68	2	2	1	25	92.00
SWA15D	$\pm 15$	165	2.5	70	2	2	1	25	92.00



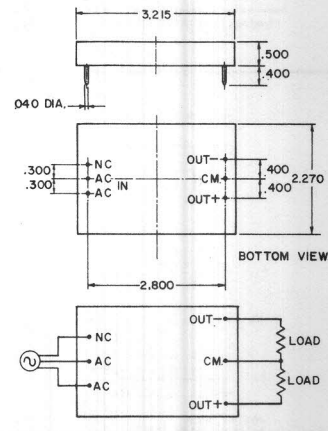
## Series SWB-Dual Output-10 Watts

PICO PART NUMBER	OUTPUT VOLTAGE (V DC)	MAX. LOAD CURRENT (mA) per output	MAX. OUTPUT POWER (watts) per output	EFF. @ FULL LOAD (%)	OUTPUT VOLTAGE TOLERANCE ( $\pm\%$ )	LOAD REGULATION 25% - 100% LOAD ( $\pm\%$ )	LINE REGULATION @ FULL LOAD ( $\pm\%$ )	OUTPUT VOLTAGE RIPPLE (mv p-p)	PRICE 1-24
SWB5D	$\pm 5$	800	4	68	2	2	1	50	102.00
SWB12D	$\pm 12$	415	5	75	2	2	1	25	102.00
SWB15D	$\pm 15$	335	5	76	2	2	1	25	102.00



## Series SWC-Dual Output-15 Watts

PICO PART NUMBER	OUTPUT VOLTAGE (V DC)	MAX. LOAD CURRENT (mA) per output	MAX. OUTPUT POWER (watts) per output	EFF. @ FULL LOAD (%)	OUTPUT VOLTAGE TOLERANCE ( $\pm\%$ )	LOAD REGULATION 25% - 100% LOAD ( $\pm\%$ )	LINE REGULATION @ FULL LOAD ( $\pm\%$ )	OUTPUT VOLTAGE RIPPLE (mv p-p)	PRICE 1-24
SWC5D	$\pm 5$	1000	5	69	2	2	1	50	112.00
SWC12D	$\pm 12$	625	7.5	75	2	2	1	25	112.00
SWC15D	$\pm 15$	500	7.5	76	2	2	1	25	112.00



Delivery—  
stock to one week

For immediate engineering assistance or to place an order—Call Toll Free 800-431-1064

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# SERIES 5AC

## Hi Reliability

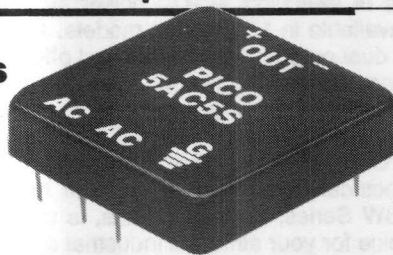
## Hi Efficiency/Isolated

## Single and Dual Outputs

## Regulated

## 5 Watt AC-DC Switchers

**Lowest Profile!**  
0.5"ht. up to 5 Watts



### TYPICAL CHARACTERISTICS:

Test conditions: 25°C ambient

Input voltage: 90-130VAC (47-440Hz)

Line/load Regulation: See specifications below

Converter frequency: 25-35 KHz typ.

Operating temperature: -25°C to +70°C ambient

Output voltage temperature coefficient: 0.02%/°C

Storage temperature: -55°C to +125°C

Isolation: 1200V RMS

Short circuit protection:  
Continuous

### OPTIONS AVAILABLE

- Expanded operating temp (-55°C to +85°C)
- Stabilization Bake (125°C ambient)
- Temperature Cycle (-55°C to +125°C)
- Hi Temp, burn in

**No Heat Sink  
or Electrical  
Derating Required**

**Low Capacity Option**  
All units can be manufactured  
with isolation capacity  
of 50pF. Contact factory.

## 5 Watt AC-DC Switchers

### FEATURES:

- Low profile 0.500"
- Low weight
- Encapsulated semiconductors, conservatively rated for maximum reliability.
- Excellent voltage regulation
- Excellent load regulation
- Up to 5 watts output power at 70°C ambient
- Low output ripple
- Isolation 1200V RMS
- Single and dual outputs
- No heat sink required
- Miniature size
- No output capacitor required
- Shielding

This series of low profile, 5 Watt AC to DC switchers come in 7 different models. These units offer high efficiency and precise regulation throughout the operating temperature range of -25°C to +70°C ambient, with no heat sink or electrical derating required. The 5 AC series keeps a maximum 0.500" height while still offering you 1200 volts RMS isolation in a rugged encapsulated case. The convenience of PC mounting and the availability of three outputs should aid your circuit design.

## SERIES 5AC SINGLE OUTPUT/INPUT VOLTAGE 90-130VAC (47-440Hz) (OPTIONAL 170-240VAC, 47-400Hz\*\*)

PICO PART NUMBER	OUTPUT VOLTAGE RANGE	MAX. LOAD CURRENT mA	MAX. OUTPUT POWER (watts)	EFF. @ FULL LOAD TYPICAL (%)*	OUT VOLT RIPPLE @ FULL LD. 1-1 MHz BW mv p-p	OUT VOLT TOLERANCE (±%)*	V LD. REG. 10%-100% LOAD † (±%)*	LINE REGULATION (±%)*	PRICE 1-24
5AC5S	5	1000	5	72	50	0.5	0.5	0.2	189.00
5AC12S	12	417	5	75	50	0.5	0.5	0.2	189.00
5AC15S	15	333	5	75	50	0.5	0.5	0.2	189.00
5AC24S	24	208	5	76	50	0.5	0.5	0.2	189.00

\*Readings taken at 115VAC-60Hz

† = 10% minimum load required

\*\*All units available with 170-240VAC Input. Add H, prefix to part number-\$40 per unit cost added.

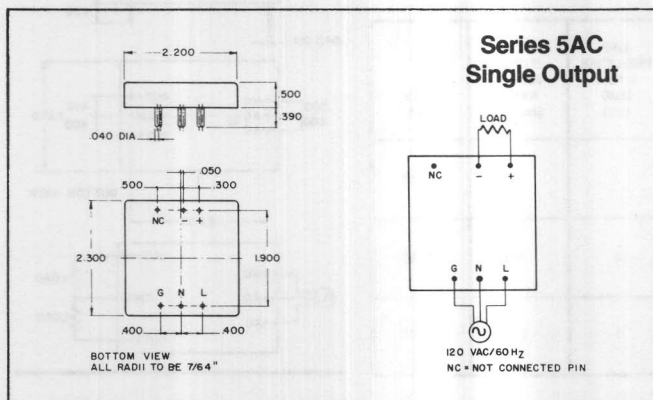
## SERIES 5AC DUAL OUTPUT/INPUT VOLTAGE 90-130VAC (47-440Hz) (OPTIONAL 170-240VAC, 47-400Hz\*\*)

PICO PART NUMBER	OUTPUT VOLTAGE RANGE	MAX. LOAD CURRENT mA PER OUTPUT	MAX. OUTPUT POWER (watts) PER OUTPUT	EFF. @ FULL LOAD TYPICAL (%)*	OUT VOLT RIPPLE @ FULL LD. 1-1 MHz BW mv p-p	OUT VOLT TOLERANCE (±%)*	V LD. REG. 25%-100% LOAD † (±%)*	LINE REGULATION (±%)*	PRICE 1-24
5AC5D	±5	500	2.5	72	50	0.5	0.5	0.2	214.00
5AC12D	±12	209	2.5	75	50	0.5	0.5	0.2	214.00
5AC15D	±15	167	2.5	75	50	0.5	0.5	0.2	214.00

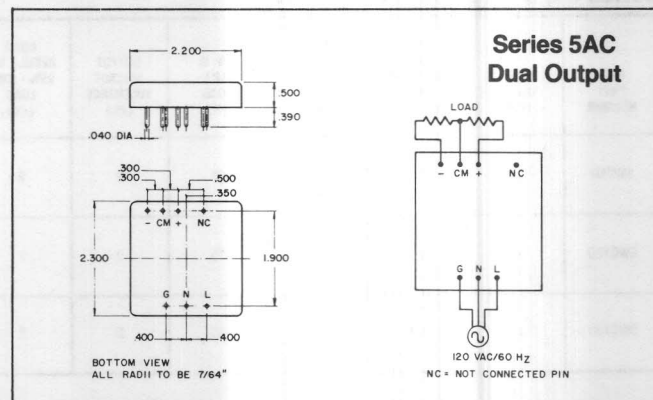
\*Readings taken at 115VAC-60Hz

† = 10% minimum load required

\*\*All units available with 170-240VAC Input. Add H, prefix to part number-\$40 per unit cost added.



Typical Weight: 130 Grams



Typical Weight: 145 Grams

**Delivery—  
stock to one week**

For immediate engineering assistance or to place an order—Call Toll Free 800-431-1064

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# SERIES 50AC

## Hi Reliability

## Hi Efficiency/Isolated

## Single, Dual and Triple

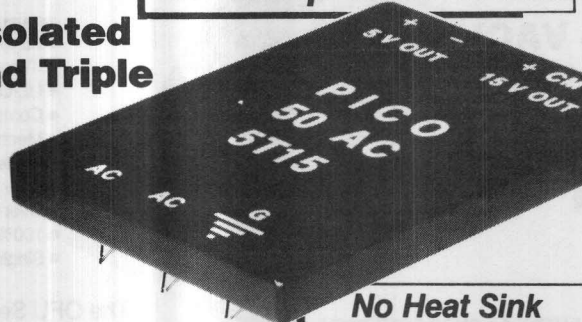
## Outputs

## Regulated

## 55 Watt AC-DC

## Switchers

**Lowest Profile!**  
0.5" ht. up to 55 Watts



**No Heat Sink  
or Electrical  
Derating Required**

### TYPICAL CHARACTERISTICS:

Test conditions: 25°C ambient

Input voltage: 90-130VAC (47-440Hz)

Line/load regulation: See specifications below

Converter frequency: 40-60 KHz typ.

Operating temperature: -25°C to +70°C ambient

Output voltage temperature coefficient: 0.02%/°C

Storage temperature: -55°C to +125°C

Isolation: 1200V RMS

Short circuit protection: Continuous

### OPTIONS AVAILABLE PER MIL-STD-883

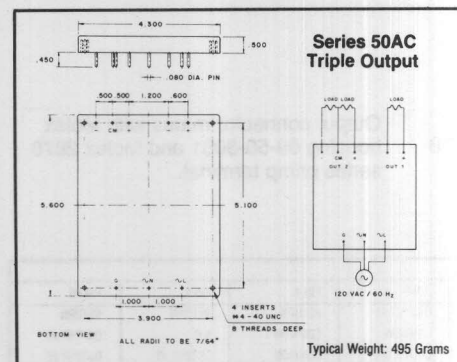
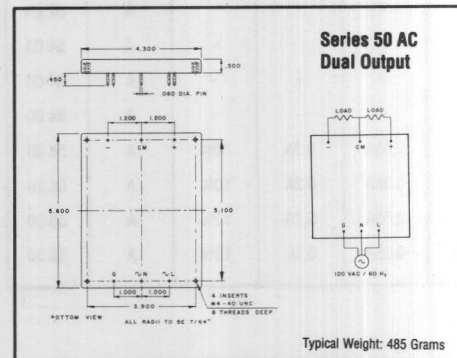
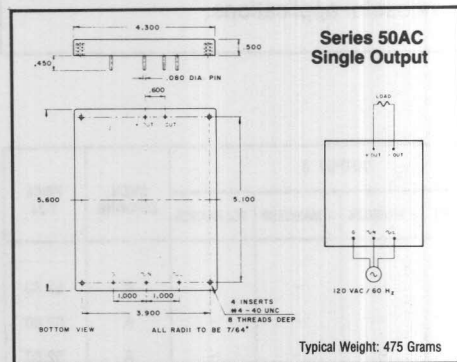
- Expanded operating temp (-55°C to +85°C)
- Stabilization Bake (125°C ambient)
- Temperature Cycle (-55°C to +125°C)
- Hi Temp, burn in

## 55 Watt AC-DC Switchers

### FEATURES:

- Low Profile 0.500"
- Low weight
- Encapsulated semiconductors, conservatively rated for maximum reliability.
- Excellent voltage regulation
- Excellent load regulation
- Up to 55 watts output power at 70°C ambient
- Low output ripple
- Isolation 1200V RMS
- Single, Dual and Triple Outputs
- No heat sink required
- Miniature size
- No output capacitor required
- Shielding

This series of low profile, 45-55 Watt AC to DC switchers come in 11 different models. These units offer high efficiency and precise regulation throughout the operating temperature range of -25°C to +70°C ambient, with no heat sink or electrical derating required. The 50AC series keeps a maximum 0.500" height while still offering you 1200 volts RMS isolation in a rugged encapsulated case. The convenience of PC mounting and the availability of three outputs should aid your circuit design.



## SERIES 50AC SINGLE OUTPUT

### INPUT VOLTAGE 90-130VAC (47-440Hz)

### (OPTIONAL 170-240VAC, 47-400Hz\*\*)

PICO PART NUMBER	OUTPUT VOLTAGE VDC	MAX. LOAD CURRENT mA	MAX. OUTPUT POWER (watts) PER OUTPUT	EFF. @ FULL LOAD TYPICAL (%)	OUT VOLT RIPPLE @ FULL LD. 1-1 MHz BW mv p-p	OUT VOLT TOLERANCE (±%)	V LD. REG. 10%-100% LOAD † (±%)	LINE REGULATION (±%)	PRICE 1-24
50AC5S	5	9000	45	75	50	1.0	0.75	0.2	359.00
50AC12S	12	4583	55	80	50	0.5	0.30	0.2	359.00
50AC15S	15	3667	55	83	50	0.5	0.30	0.2	359.00
50AC24S	24	2292	55	86	50	0.5	0.30	0.2	359.00

\*Readings taken at 115VAC-60Hz  
† = 10% minimum load required

\*\*All units available with 170-240VAC Input. Add H, prefix to part number-\$40 per unit cost added.

## SERIES 50AC DUAL OUTPUT

### INPUT VOLTAGE 90-130VAC (47-440Hz)

### (OPTIONAL 170-240VAC, 47-400Hz\*\*)

PICO PART NUMBER	OUTPUT VOLTAGE VDC	MAX. LOAD CURRENT mA PER OUTPUT	MAX. OUTPUT POWER (watts) PER OUTPUT	EFF. @ FULL LOAD TYPICAL (%)	OUT VOLT RIPPLE @ FULL LD. 1-1 MHz BW mv p-p	OUT VOLT TOLERANCE (±%)	V LD. REG. 10%-100% LOAD † (±%)	LINE REGULATION (±%)	PRICE 1-24
50AC5D	5	4500	22.5	75	50	1.0	0.75	0.2	377.00
50AC12D	12	2291	27.5	80	50	0.5	0.30	0.2	377.00
50AC15D	15	1833	27.5	83	50	0.5	0.30	0.2	377.00

\*Readings taken at 115VAC-60Hz  
† = 10% minimum load required

\*\*All units available with 170-240VAC Input. Add H, prefix to part number-\$40 per unit cost added.

## SERIES 50AC TRIPLE OUTPUT

### INPUT VOLTAGE 90-130VAC (47-440Hz)

### (OPTIONAL 170-240VAC, 47-400Hz\*\*)

PICO PART NUMBER	MAIN OUTPUT VOLTAGE					AUXILIARY OUTPUT VOLTAGE						
	OUTPUT VOLTAGE DC	MAX. LOAD CURRENT mA	MAX. OUTPUT POWER (watts)	V LD. REG. 25-100% LOAD (±%)	OUT VOLT RIPPLE @ FULL LD. 1-1 MHz BW mv p-p	OUTPUT VOLTAGE DC PER OUTPUT	MAX. LOAD CURRENT mA PER OUTPUT	MAX. OUTPUT POWER (watts) PER OUTPUT	VOLT. REG. 25-100% LOAD † (±%)	OUTPUT RIPPLE @ FULL LD. 1-1 MHz BW mv p-p	EFF. @ FULL LOAD TYPICAL (%)	PRICE 1-24
50AC5T12	5	8000	40	0.75	50	±12	208	2.5	1.0	50	75	395.00
50AC5T15	5	8000	40	0.75	50	±15	167	2.5	1.0	50	75	395.00
50AC12T5	12	3750	45	0.25	50	±5	500	2.5	1.0	50	77	395.00
50AC15T5	15	3000	45	0.25	50	±5	500	2.5	1.0	50	79	395.00

Common Characteristics  
Main Output Voltage Tolerance ±0.5%\*  
Main Line Regulation ±0.2%

Common Characteristics  
Auxiliary Output Voltage Tolerance ±0.5%\*  
Auxiliary Line Regulation ±0.2%

\*Measurements taken at 115VAC-60Hz

† = 10% minimum load required

\*\*All units available with 170-240VAC Input. Add H, prefix to part number-\$40 per unit cost added.

**Delivery—  
stock to one week**

For immediate engineering assistance or to place an order—Call Toll Free 800-431-1064

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## SERIES OFU

### 30-40-65 Watt Universal Input (85-264 VAC) No Jumper Required Agency Approved Isolated Short Circuit Protection

#### TYPICAL CHARACTERISTICS:

Meets conduction limits: FCC 20780 Level B,  
VDE 0871 Level A

Meets or exceeds:

UL 1950

CSA 1402C

EN 60950/IEC 950

Efficiency: 65% min. @ full load

Hold-up time: 16 msec typical

Line regulation:  $\pm 0.5\%$  max. @ full load

Inrush current: 30 Amps @ 115 VAC  
60 Amps @ 230 VAC

Isolation: 3750 VAC—input to output  
1250 VAC—input to ground

#### ELECTRICAL CHARACTERISTICS ALL MODELS:

Input voltage: 85 to 264 VAC

Input frequency: 47 to 440 Hz

Input current:	OFU 30	OFU 40	OFU 65
115 VAC	0.65A	0.85A	1.0A
230 VAC	0.35A	0.45A	0.6A

Over voltage: 5.6 to 6.6V threshold on 5V output models

Over current: All outputs short circuit protected

Ripple/noise: 1% p-p max. on all models

Temp. coefficient:  $\pm 0.04\%/^{\circ}\text{C}$

## Open Frame PCB AC-DC Switchers

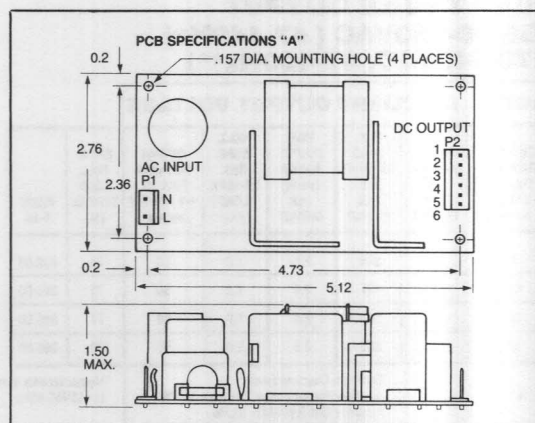
#### FEATURES:

- 85 to 264 VAC input
- 47 to 440 Hz
- UL-CSA-TUV certified
- Compact size
- Meets FCC/VDE-EMI requirements
- Hi-Reliability
- Over voltage protection
- Over current protection
- 100% hi-temperature testing
- Single-Dual-Triple outputs

The OFU Series of Open Frame AC-DC Switching Power Supplies are designed to offer the best of today's technical advancements. Standard features include small size, universal input, agency approvals, plus 100% burn-in. For a high reliable, low cost answer to your circuit requirements, let PICO simplify your power needs for computer designs or industrial applications.

#### OFU3-30 Watt, 85-264 VAC Input

MODEL NUMBER	MAX. TOTAL POWER	OUTPUT 1				OUTPUT 2				OUTPUT 3				MECH. DRAWING	PRICE 1-24
		V OUTPUT	I MINIMUM	I MAXIMUM	TOLERANCE	V OUTPUT	I MINIMUM	I MAXIMUM	TOLERANCE	V OUTPUT	I MINIMUM	I MAXIMUM	TOLERANCE		
OFU3-1S	25W	+5VDC	0.3A	5A	1%	—	—	—	—	—	—	—	—	A	52.80
OFU3-2S	30W	+12VDC	0.2A	2.5A	1%	—	—	—	—	—	—	—	—	A	52.80
OFU3-3S	30W	+15VDC	0.1A	2A	1%	—	—	—	—	—	—	—	—	A	52.80
OFU3-4S	30W	+24VDC	0.1A	1.3A	1%	—	—	—	—	—	—	—	—	A	52.80
OFU3-5D	30W	+5VDC	0.3A	3A	3%	+12VDC	0.3A	1.5A	5%	—	—	—	—	A	54.00
OFU3-6D	30W	+5VDC	0.3A	3A	3%	+15VDC	0.2A	1.5A	5%	—	—	—	—	A	54.00
OFU3-7D	30W	+5VDC	0.3A	3A	3%	+24VDC	0.1A	1A	5%	—	—	—	—	A	54.00
OFU3-8M	30W	+5VDC	0.3A	3A	3%	+12VDC	0.3A	1.5A	5%	-5VDC	0.05A	0.2A	10%	A	56.20
OFU3-9M	30W	+5VDC	0.3A	3A	3%	+12VDC	0.3A	1.5A	5%	-12VDC	0.05A	0.2A	10%	A	56.20
OFU3-10M	30W	+5VDC	0.3A	3A	3%	+15VDC	0.2A	1.5A	5%	-15VDC	0.05A	0.2A	10%	A	56.20
OFU3-11M	30W	+5VDC	0.3A	3A	3%	+15VDC	0.2A	1.5A	5%	-12VDC	0.05A	0.2A	10%	A	56.20



#### NOTES:

1. Dimensions shown in inch.
2. Tolerance 0.02 maximum.
3. Weight: 9.9 oz. (280 grams) approx.

#### CONNECTOR DATA

Input connector mates with Molex housing 09-50-3031 and Molex 2878 series crimp terminal.

Output connector mates with Molex housing 09-50-3061 and Molex 2878 series crimp terminal.

#### PIN CHART PCB "A"

MODEL NUMBER	DC OUTPUT CONNECTOR					
	PIN 1	PIN 2	PIN 3	PIN 4	PIN 5	PIN 6
OFU3-1S/2S/3S/4S	OUTPUT #1	OUTPUT #1	OUTPUT #1	RETURN	RETURN	RETURN
OFU3-5D/6D/7D	OUTPUT #1	OUTPUT #1	COMMON	COMMON	N.C.	OUTPUT #2
OFU3-8M/9M/10M/11M	OUTPUT #1	OUTPUT #1	COMMON	COMMON	OUTPUT #3	OUTPUT #2

Delivery—  
stock to one week

For immediate engineering assistance or to place an order—Call Toll Free 800-431-1064

## PICO Electronics, Inc.

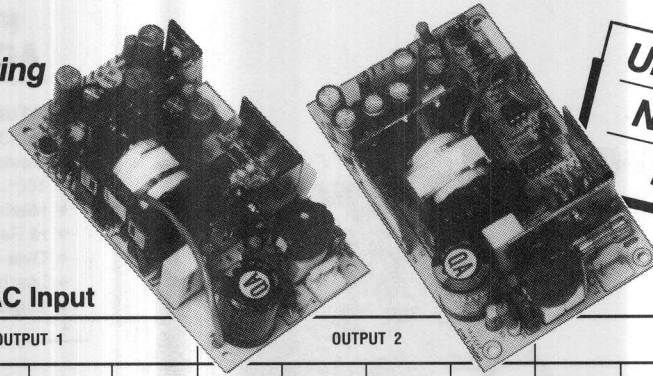
453 N. MacQuesten Pkwy., Mt. Vernon, N.Y. 10552 • 914-699-5514 • FAX 914-699-5565

## 35 MODELS

0°C to +50°C Operating Temperature

Single-Dual Multiple Outputs Available

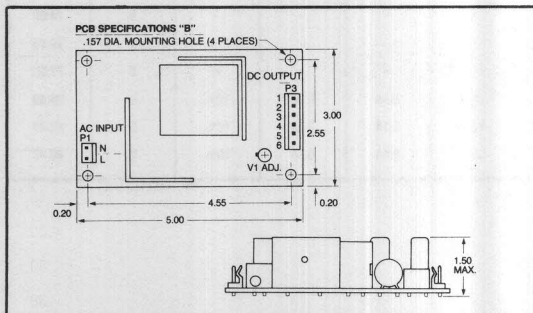
Standard 100% Hi Temp Testing



Universal Input Voltage  
No Jumper Required  
Multiple Outputs

### OFU4-40 Watt, 85-264 VAC Input

MODEL NUMBER	MAX. TOTAL POWER	OUTPUT 1				OUTPUT 2				OUTPUT 3				MECH. DRAWING	PRICE 1-24
		V OUTPUT	I MINIMUM	I MAXIMUM	TOLERANCE	V OUTPUT	I MINIMUM	I MAXIMUM	TOLERANCE	V OUTPUT	I MINIMUM	I MAXIMUM	TOLERANCE		
OFU4-1S	30W	+5VDC	0.5A	6A	1%	—	—	—	—	—	—	—	—	B	61.20
OFU4-2S	40W	+12VDC	0.2A	3.5A	1%	—	—	—	—	—	—	—	—	B	61.20
OFU4-3S	40W	+15VDC	0.2A	3A	1%	—	—	—	—	—	—	—	—	B	61.20
OFU4-4S	40W	+24VDC	0.1A	2A	1%	—	—	—	—	—	—	—	—	B	61.20
OFU4-5D	40W	+5VDC	0.5A	3A	3%	+12VDC	0.2A	2A	5%	—	—	—	—	B	61.20
OFU4-6D	40W	+5VDC	0.5A	3A	3%	+15VDC	0.2A	2A	5%	—	—	—	—	B	61.20
OFU4-7D	40W	+5VDC	0.5A	3A	3%	+24VDC	0.1A	1A	5%	—	—	—	—	B	61.20
OFU4-8M	40W	+5VDC	0.5A	3A	3%	+12VDC	0.2A	2A	5%	-5VDC	0.05A	0.3A	10%	B	61.20
OFU4-9M	40W	+5VDC	0.5A	3A	3%	+12VDC	0.2A	2A	5%	-12VDC	0.05A	0.3A	10%	B	61.20
OFU4-10M	40W	+5VDC	0.5A	3A	3%	+15VDC	0.2A	2A	5%	-15VDC	0.05A	0.3A	10%	B	61.20
OFU4-11M	40W	+5VDC	0.5A	3A	3%	+15VDC	0.2A	2A	5%	-12VDC	0.05A	0.3A	10%	B	61.20
OFU4-12M	40W	+5VDC	0.5A	3A	3%	+24VDC	0.1A	1A	5%	-12VDC	0.05A	0.3A	10%	B	61.60



- NOTES: 1. Dimensions shown in inch.  
2. Tolerance 0.02 maximum.  
3. Weight: 10.6 oz. (300 grams) approx.

#### CONNECTOR DATA

Input connector mates with Molex housing 09-50-3031 and Molex 2878 series crimp terminal.

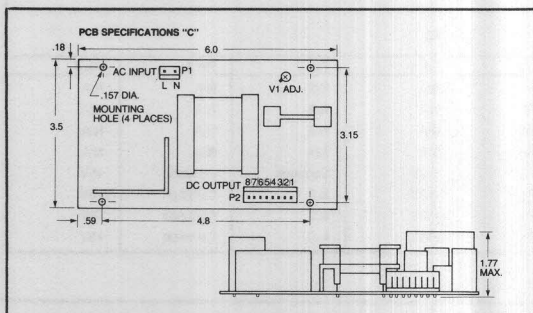
Output connector mates with Molex housing 09-50-3061 and Molex 2878 series crimp terminal.

#### PIN CHART PCB "B"

MODEL NUMBER	DC OUTPUT CONNECTOR					
	PIN 1	PIN 2	PIN 3	PIN 4	PIN 5	PIN 6
OFU4-1S/2S/3S/4S	OUTPUT #1	OUTPUT #1	OUTPUT #1	RETURN COMMON	RETURN COMMON	RETURN
OFU4-5D/6D/7D	OUTPUT #2	OUTPUT #1	OUTPUT #1	COMMON	COMMON	N.C.
OFU4-8M/9M/10M/11M/12M	OUTPUT #2	OUTPUT #1	OUTPUT #1	COMMON	COMMON	OUTPUT #3

### OFU6-65 Watt, 85-264 VAC Input

MODEL NUMBER	MAX. TOTAL POWER	OUTPUT 1				OUTPUT 2				OUTPUT 3				MECH. DRAWING	PRICE 1-24
		V OUTPUT	I MINIMUM	I MAXIMUM	TOLERANCE	V OUTPUT	I MINIMUM	I MAXIMUM	TOLERANCE	V OUTPUT	I MINIMUM	I MAXIMUM	TOLERANCE		
OFU6-1S	50W	+5VDC	1A	10A	1%	—	—	—	—	—	—	—	—	C	68.20
OFU6-2S	65W	+12VDC	0.5A	5.5A	1%	—	—	—	—	—	—	—	—	C	68.20
OFU6-3S	65W	+15VDC	0.4A	4.5A	1%	—	—	—	—	—	—	—	—	C	68.20
OFU6-4S	65W	+24VDC	0.3A	3A	1%	—	—	—	—	—	—	—	—	C	68.20
OFU6-5D	65W	+5VDC	1A	6A	3%	+12VDC	0.5A	3A	5%	—	—	—	—	C	69.40
OFU6-6D	65W	+5VDC	1A	6A	3%	+15VDC	0.4A	3A	5%	—	—	—	—	C	69.40
OFU6-7D	65W	+5VDC	1A	6A	3%	+24VDC	0.3A	2A	5%	—	—	—	—	C	69.40
OFU6-8M	65W	+5VDC	1A	6A	3%	+12VDC	0.5A	3A	5%	-5VDC	0.1A	0.5A	10%	C	71.60
OFU6-9M	65W	+5VDC	1A	6A	3%	+12VDC	0.5A	3A	5%	-12VDC	0.1A	0.5A	10%	C	71.60
OFU6-10M	65W	+5VDC	1A	6A	3%	+15VDC	0.4A	3A	5%	-15VDC	0.1A	0.5A	10%	C	71.60
OFU6-11M	65W	+5VDC	1A	6A	3%	+15VDC	0.4A	3A	5%	-12VDC	0.1A	0.5A	10%	C	71.60
OFU6-12M	65W	+5VDC	1A	6A	3%	+24VDC	0.3A	2A	5%	-12VDC	0.1A	0.5A	10%	C	71.60



- NOTES: 1. Dimensions shown in inch.  
2. Tolerance 0.02 maximum.  
3. Weight: 13.4 oz. (380 grams) approx.

#### CONNECTOR DATA

Input connector mates with Molex housing 09-50-3031 and Molex 2878 series crimp terminal.

Output connector mates with Molex housing 09-50-3081 and Molex 2878 series crimp terminal.

#### PIN CHART PCB "C"

MODEL NUMBER	DC OUTPUT CONNECTOR							
	PIN 1	PIN 2	PIN 3	PIN 4	PIN 5	PIN 6	PIN 7	PIN 8
OFU6-1S/2S/3S/4S	OUTPUT #1	OUTPUT #1	OUTPUT #1	OUTPUT #1	RETURN	RETURN	RETURN	RETURN
OFU6-5D/6D/7D	OUTPUT #1	OUTPUT #1	COMMON	COMMON	OUTPUT #2	OUTPUT #2	N.C.	N.C.
OFU6-8M/9M/10M/11M/12M	OUTPUT #1	OUTPUT #1	COMMON	COMMON	OUTPUT #2	OUTPUT #2	OUTPUT #3	N.C.

Delivery—  
stock to one week

For immediate engineering assistance or to place an order—Call Toll Free 800-431-1064

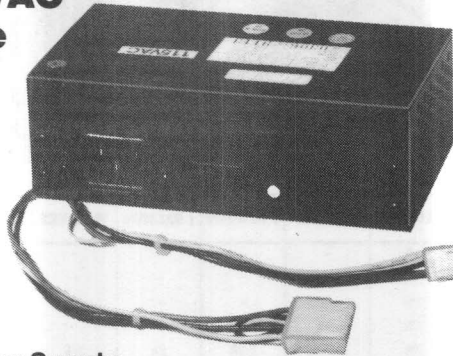
## PICO Electronics, Inc.

453 N. MacQuesten Pkwy., Mt. Vernon, N.Y. 10552 • 914-699-5514 • FAX 914-699-5565



## SERIES OFB

**50-130 Watt  
Fully Enclosed  
90-130 VAC or 180-260 VAC  
Input-Jumper Selectable  
Short Circuit Protection  
Isolated Outputs**



## Fully Enclosed AC-DC Switchers

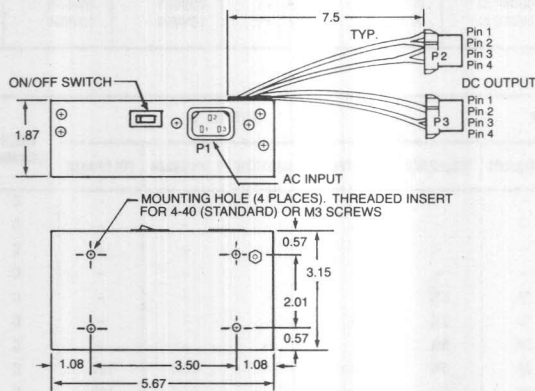
### FEATURES:

- 90-130 VAC or 180-260 VAC input
- Meets FCC/VDE, EMI requirements
- 100% burn-in testing
- Meets or exceeds UL-CSA requirements
- Hi Reliability
- Over current protection
- Low noise less than 1% p-p
- Single-dual-triple and quad outputs

### OFB 5-50 Watt AC-DC Switching Power Supply

MODEL NUMBER	MAX. TOTAL POWER	OUTPUT 1				OUTPUT 2				OUTPUT 3				MECH. DRAWING	PRICE 1-24
		V OUTPUT	I MINIMUM	I MAXIMUM	TOLERANCE	V OUTPUT	I MINIMUM	I MAXIMUM	TOLERANCE	V OUTPUT	I MINIMUM	I MAXIMUM	TOLERANCE		
OFB5-1S	50W	+5vdc	2A	10A	1%	-	-	-	-	-	-	-	-	D	74.80
OFB5-2S	50W	+12vdc	0.8A	4.2A	1%	-	-	-	-	-	-	-	-	D	74.80
OFB5-3S	50W	+15vdc	0.6A	3.5A	1%	-	-	-	-	-	-	-	-	D	74.80
OFB5-4S	50W	+24vdc	0.4A	2.2A	1%	-	-	-	-	-	-	-	-	D	74.80
OFB5-5D	50W	+5vdc	0.5A	2A	3%	+12vdc	0.5A	3.5A	5%	-	-	-	-	D	77.00
OFB5-6M	50W	+5vdc	1A	6A	3%	+12vdc	0.4A	2A	5%	-5vdc	0.1A	0.5A	10%	D	80.40
OFB5-7M	50W	+5vdc	1A	6A	3%	+12vdc	0.4A	2A	5%	-12vdc	0.1A	0.5A	10%	D	80.40
OFB5-8M	50W	+5vdc	1A	6A	3%	+15vdc	0.4A	2A	5%	-15vdc	0.1A	0.5A	10%	D	80.40

### MECHANICAL SPECIFICATIONS "D"



### NOTES:

1. Dimensions shown in inch.
2. Tolerance 0.02 maximum.
3. Weight: 21.9 oz. (620 grams) approx.

### CONNECTOR DATA

Output connectors mate with AMP P/N 1-480426-0 pin housing assembly or P/N 1-350211-1 pin header assembly.

### PIN CHART OFB5 "D"

MODEL NUMBER	CONNECTOR NO. P1			P2				P3			
	PIN 1	PIN 2	PIN 3	PIN 1	PIN 2	PIN 3	PIN 4	PIN 1	PIN 2	PIN 3	PIN 4
OFB5-1S	AC Live	Ground	AC Neutral	Return	Return	+5V	+5V	N/A	N/A	N/A	N/A
OFB5-2S	AC Live	Ground	AC Neutral	Return	Return	+12V	+12V	N/A	N/A	N/A	N/A
OFB5-3S	AC Live	Ground	AC Neutral	Return	Return	+15V	+15V	N/A	N/A	N/A	N/A
OFB5-4S	AC Live	Ground	AC Neutral	Return	Return	+24V	+24V	N/A	N/A	N/A	N/A
OFB5-5D	AC Live	Ground	AC Neutral	+12V	Common	Common	+5V	+12V	Common	Common	+5V
OFB5-6M	AC Live	Ground	AC Neutral	+12V	-5V	Common	+5V	+12V	N.C.	Common	+5V
OFB5-7M	AC Live	Ground	AC Neutral	+12V	-12V	Common	+5V	+12V	N.C.	Common	+5V
OFB5-8M	AC Live	Ground	AC Neutral	+15V	-15V	Common	+5V	+15V	N.C.	Common	+5V

Delivery—  
stock to one week

For immediate engineering assistance or to place an order—Call Toll Free 800-431-1064

**PICO Electronics, Inc.**

453 N. MacQuesten Pkwy., Mt. Vernon, N.Y. 10552 • 914-699-5514 • FAX 914-699-5565

The OFB Series of fully enclosed AC-DC Switching Power Supplies are designed to offer the best of today's technical advancements. Standard features include small size, jumper selectable input voltage, meeting agency requirements and 100% burn-in, for a high reliable, low cost answer to your circuit requirements. One to four standard outputs ease your distribution problems for computer designs or industrial applications.

#### TYPICAL CHARACTERISTICS:

**Input voltage:** 90-130 VAC or 180-260 VAC jumper selectable

**Input frequency:** 47 to 440 Hz

**Input current:** OFB 5 OFB 13

115 VAC	0.9 A	2.8 A
230 VAC	0.5 A	1.5 A

**Ripple and noise:** 1% p-p max.

**Short circuit protection:** All outputs

**Over voltage protection:** Output one all models

**Temp. coefficient:**  $\pm 0.04\%/^{\circ}\text{C}$

**Efficiency:** 65% min. @ full load

**Line regulation:**  $\pm 0.5\%$  max. @ full load

**Isolation:** Input to output 3000 VAC  
Input to ground 1500 VAC

**Operating temp:**  $0^{\circ}\text{C}$  to  $+50^{\circ}\text{C}$

**Storage temp:**  $-20^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$

**Hold-up time:** 20 msec typical

**EMI requirements:** Meets requirements FCC 20780 Level B, VDE 0871 Level A

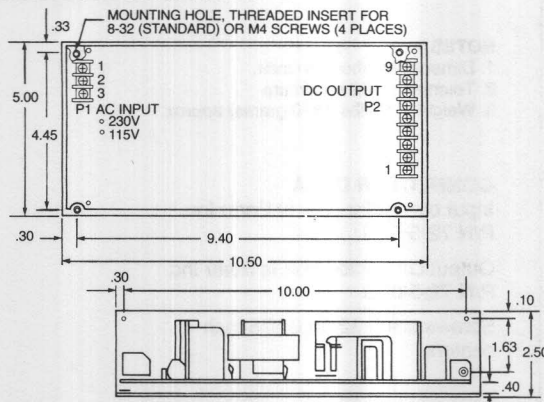
**Safety requirements:** Model OFB 5 certified, UL-1950, CSA-1402C, EN 60950/IEC 950.

Model OFB 13 meets requirements of UL-1950, CSA 1402C, IEC 950.

### OFB 13-130 Watt AC-DC Switching Power Supply

MODEL NUMBER	MAX. TOTAL POWER	OUTPUT 1				OUTPUT 2				OUTPUT 3				OUTPUT 4				MECH. DRAWING	PRICE 1-24
		V OUTPUT	I MINIMUM	I MAXIMUM	TOLERANCE	V OUTPUT	I MINIMUM	I MAXIMUM	TOLERANCE	V OUTPUT	I MINIMUM	I MAXIMUM	TOLERANCE	V OUTPUT	I MINIMUM	I MAXIMUM	TOLERANCE		
OFB13-1D	130W	+5vdc	3A	15A	3%	+12vdc	1A	5A	5%	-	-	-	-	-	-	-	-	E	129.80
OFB13-2T	130W	+5vdc	3A	15A	3%	+12vdc	1A	5A	5%	-12vdc	0A	0.8A	5%	-	-	-	-	E	132.40
OFB13-3M	130W	+5vdc	3A	15A	3%	+12vdc	0.8A	4A	5%	-12vdc	0A	0.8A	5%	-5vdc	0	0.8A	5%	E	137.60
OFB13-4M	130W	+5vdc	3A	15A	3%	+12vdc	0.8A	4A	5%	-12vdc	0A	0.8A	5%	+12vdc	0.5A	1.5A	6%	E	137.60
OFB13-5M	130W	+5vdc	3A	15A	3%	+12vdc	0.8A	4A	5%	-12vdc	0A	0.8A	5%	+15vdc	1A	4A	10%	E	137.60
OFB13-6M	130W	+5vdc	3A	15A	3%	+12vdc	0.8A	4A	5%	-15vdc	0A	0.8A	5%	+15vdc	0.5A	1.5A	6%	E	137.60
OFB13-7M	130W	+5vdc	3A	15A	3%	+12vdc	0.8A	4A	5%	-12vdc	0A	0.8A	5%	+24vdc	1A	4A	10%	E	137.60

#### MECHANICAL SPECIFICATIONS "E"



#### NOTES:

1. Dimensions shown in inch.
2. Tolerance 0.02 maximum.
3. Weight: 3.5 lbs. approx. for enclosed unit.

#### CONNECTOR DATA

Input connector type is Beau Inc. P/N 72-5-03C.

Output connector type is Beau Inc. P/N 72-5-09C.

Screws are 6-32 on 0.375 inch centers.

### PIN CHART OFB13 "E"

MODEL NUMBER	CONNECTOR NO. P1			P2						
	PIN 1	PIN 2	PIN 3	PIN 1	PIN 2	PIN 3	PIN 4	PIN 5,6,7	PIN 8,9	PIN 10
OFB13-1D	AC Ground	AC Neutral	AC Live	P.F.D.*	+12V	-5V	N.C.	Common	+5V	N.C.
OFB13-2T	AC Ground	AC Neutral	AC Live	P.F.D.*	+12V	N.C.	-12V	Common	+5V	N.C.
OFB13-3M	AC Ground	AC Neutral	AC Live	P.F.D.*	+12V	-5V	-12V	Common	+5V	N.C.
OFB13-4M	AC Ground	AC Neutral	AC Live	P.F.D.*	+12V (6A)	N.C.	-12V	Common	+5V	+12V (4A)
OFB13-5M	AC Ground	AC Neutral	AC Live	P.F.D.*	+12V	N.C.	-12V	Common	+5V	+24V
OFB13-6M	AC Ground	AC Neutral	AC Live	P.F.D.*	+12V (6A)	-5V	-12V	Common	+5V	+12V (4A)
OFB13-7M	AC Ground	AC Neutral	AC Live	P.F.D.*	+12V	-5V	-12V	Common	+5V	+24V

Delivery—  
stock to one week

For immediate engineering assistance or to place an order—Call Toll Free 800-431-1064

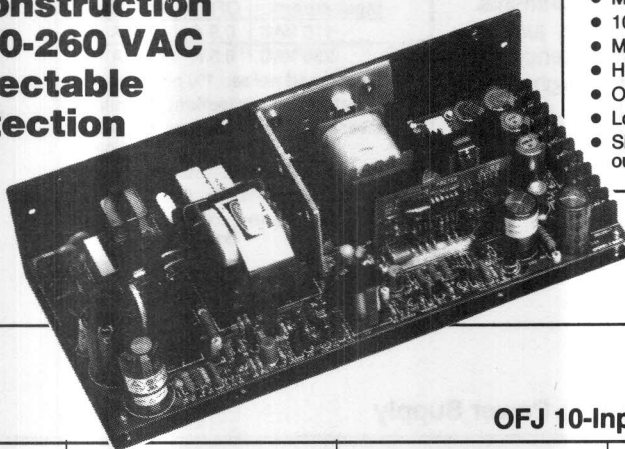
## PICO Electronics, Inc.

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## SERIES OFJ

**100-200 Watt  
PCB-L-Bracket Construction  
90-130 VAC or 180-260 VAC  
Input-Jumper Selectable  
Short Circuit Protection  
Isolated Outputs**



## AC-DC Switchers

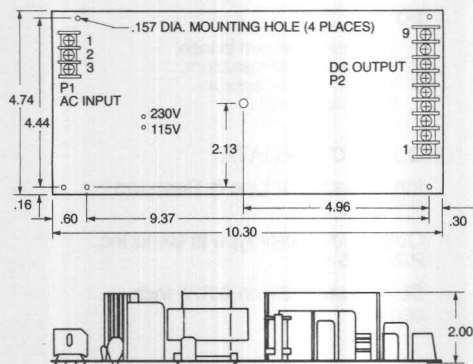
### FEATURES:

- 90-130 VAC or 180-260 VAC input
- Meets FCC/VDE, EMI requirements
- 100% burn-in testing
- Meets or exceeds UL-CSA-IEC requirements
- Hi Reliability
- Over current protection
- Low noise less than 1% p-p
- Single-dual-triple quad and 2 models with five outputs

### OFJ 10-Input 90-130 VAC or 180-260 VAC

MODEL NUMBER	MAX. TOTAL POWER	OUTPUT 1				OUTPUT 2				OUTPUT 3				OUTPUT 4				MECH. DRAWING	PRICE 1-24
		V OUTPUT	I MINIMUM	I MAXIMUM	TOLERANCE	V OUTPUT	I MINIMUM	I MAXIMUM	TOLERANCE	V OUTPUT	I MINIMUM	I MAXIMUM	TOLERANCE	V OUTPUT	I MINIMUM	I MAXIMUM	TOLERANCE		
OFJ10-1D	100W	+5vdc	2A	10A	3%	+12vdc	1A	5A	5%	—	—	—	—	—	—	—	—	F	104.60
OFJ10-2M	100W	+5vdc	2A	10A	3%	+12vdc	1A	5A	5%	-12vdc	0A	0.8A	5%	—	—	—	—	F	106.80
OFJ10-3M	100W	+5vdc	2A	10A	3%	+12vdc	0.8A	4A	5%	-12vdc	0A	0.8A	5%	-5vdc	0A	0.8A	5%	F	109.00
OFJ10-4M	100W	+5vdc	2A	10A	3%	+12vdc	0.8A	4A	5%	-12vdc	0A	0.8A	5%	+12vdc	0.5A	1.5A	6%	F	109.00
OFJ10-5M	100W	+5vdc	2A	10A	3%	+12vdc	0.8A	4A	5%	-12vdc	0A	0.8A	5%	+15vdc	1A	3A	8%	F	109.00
OFJ10-6M	100W	+5vdc	2A	10A	3%	+12vdc	0.8A	4A	5%	-15vdc	0A	0.8A	5%	+15vdc	0.5A	1.5A	8%	F	109.00
OFJ10-7M	100W	+5vdc	2A	10A	3%	+12vdc	0.8A	4A	5%	-12vdc	0A	0.8A	5%	+24vdc	1A	3A	8%	F	109.00

### MECHANICAL SPECIFICATIONS "F"



### NOTES:

1. Dimensions shown in inch.
2. Tolerance 0.02 maximum
3. Weight: 2.05 lbs. (930 grams) approx.

### CONNECTOR DATA

Input connector type is Beau Inc.  
P/N 72-5-03C.

Output connector type is Beau Inc.  
P/N 72-5-09C.

Screws are 6-32 on 0.375 inch centers.

### PIN CHART OFJ10 "F"

MODEL NUMBER	CONNECTOR NO. P1			P2					
	PIN 1	PIN 2	PIN 3	PIN 1	PIN 2	PIN 3	PIN 4	PIN 5,6,7	PIN 8,9
OFJ10-1D	AC Live	AC Ground	AC Neutral	P.F.D.*	N.C.	+12V	N.C.	Common	+5V
OFJ10-2M	AC Live	AC Ground	AC Neutral	P.F.D.*	-12V	+12V	N.C.	Common	+5V
OFJ10-3M	AC Live	AC Ground	AC Neutral	P.F.D.*	-12V	+12V	-5V	Common	+5V
OFJ10-4M	AC Live	AC Ground	AC Neutral	P.F.D.*	-12V	+12V (4A)	+12V (1.5A)	Common	+5V
OFJ10-5M	AC Live	AC Ground	AC Neutral	P.F.D.*	-12V	+12V	+15V	Common	+5V
OFJ10-6M	AC Live	AC Ground	AC Neutral	P.F.D.*	+15V	+12V	+15V	Common	+5V
OFJ107M	AC Live	AC Ground	AC Neutral	P.F.D.*	-12V	+12V	+24V	Common	+5V

\*Power failure detect

**Delivery—  
stock to one week**

For immediate engineering assistance or to place an order—Call Toll Free 800-431-1064

**PICO Electronics, Inc.**

453 N. MacQuesten Pkwy., Mt. Vernon, N.Y. 10552 • 914-699-5514 • FAX 914-699-5565

The OFJ Series of AC-DC Switching Power Supplies are designed to offer the best of today's technical advancements.

These models are available in 100 and 200 watts. Standard features include jumper selectable input voltage, meeting agency requirements and 100% burn-in, for a high reliable, low cost answer to your circuit requirements. 14 models with up to 5 standard outputs provide solutions for power distribution problems.

#### TYPICAL CHARACTERISTICS:

**Input voltage:** 90-130 VAC or 180-260 VAC jumper selectable

**Input frequency:** 47 to 440 Hz

Input current:	OFJ 10	OFJ 20
115 VAC	2.2 A	4.2 A
230 VAC	1.2 A	2.4 A

**Ripple and noise:** 1% p-p max.

**Short circuit protection:** All outputs

**Over voltage protection:** Output one all models

**Temp. coefficient:**  $\pm 0.04\%/^{\circ}\text{C}$

**Efficiency:** 65% min. @ full load

**Line regulation:**  $\pm 0.5\%$  max. @ full load

**Isolation:** Input to output 3750 VAC  
Input to ground 1750 VAC

**Operating temp:**  $0^{\circ}\text{C}$  to  $+50^{\circ}\text{C}$

**Storage temp:**  $-20^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$

**Hold-up time:** 20 msec typical

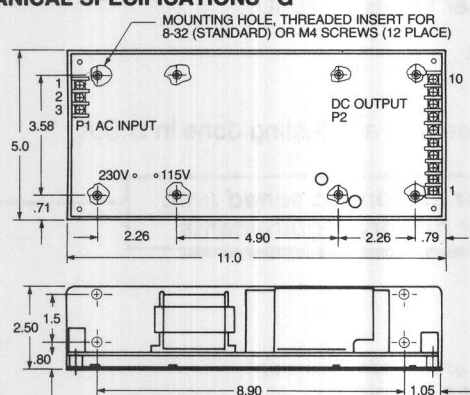
**EMI requirements:** Meets requirements FCC 20780 Level B, VDE 0871 Level A

**Safety requirements:** Meets or exceeds UL-1950, CSA-1402C, IEC 950

### OFJ 20-Input 90-130 VAC or 180-260 VAC

MODEL NUMBER	MAX. TOTAL POWER	OUTPUT 1				OUTPUT 2				OUTPUT 3				OUTPUT 4				OUTPUT 5				MECH. DRAWING	PRICE 1-24
		V OUTPUT	I MINIMUM	I MAXIMUM	TOLERANCE	V OUTPUT	I MINIMUM	I MAXIMUM	TOLERANCE	V OUTPUT	I MINIMUM	I MAXIMUM	TOLERANCE	V OUTPUT	I MINIMUM	I MAXIMUM	TOLERANCE	V OUTPUT	I MINIMUM	I MAXIMUM	TOLERANCE		
OFJ20-1M	200W	+5vdc	4A	20A	3%	+12vdc	1A	6A	5%	-5vdc	0A	1A	5%	-	-	-	-	-	-	-	-	G	162.80
OFJ20-2M	200W	+5vdc	4A	20A	3%	+12vdc	1A	6A	5%	-12vdc	0A	1A	5%	-	-	-	-	-	-	-	-	G	162.80
OFJ20-3M	200W	+5vdc	4A	20A	3%	+12vdc	1A	6A	5%	-5vdc	0A	1A	5%	-12vdc	0A	1A	5%	-	-	-	-	G	167.20
OFJ20-4M	200W	+5vdc	4A	20A	3%	+12vdc	1A	6A	5%	-12vdc	0A	1A	5%	+12vdc	0A	4A	5%	-	-	-	-	G	167.20
OFJ20-5M	200W	+5vdc	4A	20A	3%	+12vdc	1A	6A	5%	-12vdc	0A	1A	5%	+24vdc	0A	3A	8%	-	-	-	-	G	167.20
OFJ20-6M	200W	+5vdc	4A	20A	3%	+12vdc	1A	6A	5%	-5vdc	0A	1A	5%	-12vdc	0A	1A	5%	+12vdc	0.6A	4A	5%	G	171.60
OFJ20-7M	200W	+5vdc	4A	20A	3%	+12vdc	1A	6A	5%	-5vdc	0A	1A	5%	-12vdc	0A	1A	5%	+24vdc	0.3A	3A	8%	G	171.60

#### MECHANICAL SPECIFICATIONS "G"



#### NOTES:

1. Dimensions shown in inch.
2. Tolerance 0.02 maximum
3. Weight: 3.5 lbs. (1.6 Kgs) approx. for L-bracket form.

#### CONNECTOR DATA

Input connector type is Beau Inc. P/N 72-5-03C.

Output connector type is Beau Inc. P/N 72-5-10C.

Screws are 6-32 on 0.375 inch centers.

### PIN CHART OFJ20 "G"

MODEL NUMBER	CONNECTOR NO. P1			P2						
	PIN 1	PIN 2	PIN 3	PIN 1	PIN 2	PIN 3	PIN 4	PIN 5,6,7	PIN 8,9	PIN 10
OFJ20-1M	AC Ground	AC Neutral	AC Live	P.F.D.*	+12V	-5V	N.C.	Common	+5V	N.C.
OFJ20-2M	AC Ground	AC Neutral	AC Live	P.F.D.*	+12V	N.C.	-12V	Common	+5V	N.C.
OFJ20-3M	AC Ground	AC Neutral	AC Live	P.F.D.*	+12V	-5V	-12V	Common	+5V	N.C.
OFJ20-4M	AC Ground	AC Neutral	AC Live	P.F.D.*	+12V (6A)	N.C.	-12V	Common	+5V	+12V (4A)
OFJ20-5M	AC Ground	AC Neutral	AC Live	P.F.D.*	+12V	N.C.	-12V	Common	+5V	+24V
OFJ20-6M	AC Ground	AC Neutral	AC Live	P.F.D.*	+12V (6A)	-5V	-12V	Common	+5V	+12V (4A)
OFJ20-7M	AC Ground	AC Neutral	AC Live	P.F.D.*	+12V	-5V	-12V	Common	+5V	+24V

\*Power failure detect

Delivery—  
stock to one week

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## PICO Electronics, Inc.

453 N. MacQuesten Pkwy., Mt. Vernon, N.Y. 10552 • 914-699-5514 • FAX 914-699-5565



# DC-DC Converters & AC-DC Power Supplies

## OPTIONAL ENVIRONMENTAL SCREENING

All Pico DC-DC Converters and AC-DC Power Supplies are available with high reliability Screening options to insure the maximum quality unit for your system. Select from the list below or call factory for review of your specific applications.

### OPTIONS AVAILABLE

**Operating Temperature:** expanded  $-55^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$  ambient\*

**Stabilization Bake:** per MIL-STD-883, method 1008, 24 hours  
TA =  $125^{\circ}\text{C}$

**Temperature Cycle:** per MIL-STD-883, method 1010, Cond. B.  
( $-55^{\circ}\text{C}$  to  $+125^{\circ}\text{C}$ )

**Burn In:** per MIL-STD-883, method 1015, 160 hours at  $125^{\circ}\text{C}$   
(case temperature of unit  $125^{\circ}\text{C}$ )

**Isolation between input and output:** 100 megohms at 1000V D.C.

**Reduced QA Lot Acceptance:** 0.25 AQL per MIL-STD-105D

\*DC-DC Converters: No heat sink or electrical derating required.

\*AC-DC Power Supplies: No heat sink—20% derating required.

All Transformers manufactured to MIL-T-27. All assembly and testing done in U.S.A.

**Call today for price and delivery of your custom screened unit.  
Call factory to review any of your other military requirements**

*For immediate engineering assistance or to place an order—*

**Call Toll Free 800-431-1064**

**in New York Phone 914-699-5514**

**FAX 914-699-5565**

**PICO Electronics, Inc.**

453 N. MacQuesten Pkwy., Mt. Vernon, N.Y. 10552

# ORDERING INFORMATION

**GENERAL:** PICO ELECTRONICS Transformers, Inductors, DC-DC Converters and AC-DC Power Supplies are marketed on a direct factory basis and through authorized independent sales representatives in the United States and overseas. Our Sales and Engineering Departments will be pleased to assist you in choosing the correct unit for your particular application and in placing a purchase order. Call factory to review any of your other military requirements.

**TRANSFORMER DISCOUNTS:** 1-9 net, 10-24 net less 10%, 25-49 net less 16%, 50-99 net less 23%, 100-499 net less 30%. Contact factory for quantities over 499 pieces.

**DC-DC CONVERTERS and AC-DC POWER SUPPLIES DISCOUNTS:** Contact factory for quantities 25 or over.

**NO MINIMUM BILLING:** PICO will be glad to accept your order for one unit.

**DELIVERY:** Most Transformers, Inductors, DC-DC Converters and AC-DC Power Supplies are in stock for same day delivery. If unit is not in stock, shipment will be made in one week or sooner.

**TERMS:** Net, 30 days. FOB Mount Vernon, N.Y.

**GUARANTEE:** We warrant each product manufactured by us and sold by us or our authorized agents, to be free from defects in material and workmanship and that, if operated properly, it will perform within applicable specifications for a period of one year after original shipment. Our obligation under this guarantee is limited to repairing or replacing our product within one year of delivery to the original purchaser.

This warranty is in lieu of all other warranties, express or implied and constitutes fulfillment of all our liabilities to purchaser. We do not warrant that the products can be used for any particular purpose other than those covered by the applicable specifications. We assume no liability, in any event, for consequential damages, for anticipated or lost profits, incidental damages or loss of time or other losses incurred by purchaser or any third party in connection with products covered by this warranty or otherwise.

We reserve the right to discontinue products without notice, and to make modifications in design without incurring any obligation to make such modifications to products previously sold.

**SPECIAL DESIGNS:** Custom designed transformers and inductors are available for delivery in 9 days. Special designed features that are available include multiple magnetic shields, silicone rubber construction, electrostatic shielding, modification of turns ratio for better impedance match, addition of extra windings and taps, extended frequency range, broader temperature range, smaller size. Check with factory for delivery of custom designed DC-DC Converters and AC-DC Power Supplies.

*For immediate engineering assistance or to place an order—*

**Call Toll Free 800-431-1064**

**in New York Phone 914-699-5514**

**FAX 914-699-5565**

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